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ABSTRACT

Teaching styles and possible sex-typed differences in teaching approaches were studied at Ohio State University. Classroom teaching behaviors of 167 professors were observed, and interviews with a subsample of 30 professors were conducted. Additionally, student reactions to these classroom behaviors were assessed through a questionnaire administered at the end of the term. It was hypothesized that sex differences in teaching styles exist because of the role strain and status inconsistency experienced by women professors. Fairly clear and consistent sex differences were found in three kinds of teaching behaviors: those involving (1) good teaching, (2) authority management, and (3) personalizing in the classroom. While both male and female professors were equally committed to teaching in general and both were likely to spend the majority of classroom time lecturing with a fair amount of time given to student participation, women professors seemed to take a more person-oriented, student-centered approach to teaching. They were concerned with the emotional atmosphere in the classroom, with students as total persons, and with involving students extensively in the learning process. Women's orientations were more expressive and less instrumental than the men's. This difference in orientation is clearly evident in both the interview and observational data. Although teaching styles did not appear to be strong determinants of student evaluations, differences in evaluations of male and female professors are noted. A sample student questionnaire and faculty interview schedule and references are appended. (SW)

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SEX-TYPED TEACHING STYLES OF UNIVERSITY PROFESSORS AND STUDENT REACTIONS

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Final Report

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April, 1980

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CHAPTER 1

THEORETICAL APPROACH

Legislation now makes it possible for women to enter atypical occupations. However, even if all external barriers to entry and upward mobility in occupations were removed, internal barriers would remain. Once in high level positions, women must perform their assigned tasks in a manner that convinces those around them that they are competent. Perhaps the most difficult problem women encounter in this regard is carrying out the authority and leadership requirements of many high status occupations. To the extent that females in authority positions retain a traditional "feminine" style of communication they may be judged "incompetent" by significant others; and to the extent that they adopt traditional "masculine" styles of communication, they may be judged abrasive and domineering. Either possibility would be detrimental for the women involved, as both alternatives leave an unfavorable impression.

Since increasingly women are aspiring to leadership roles, it is imperative that we understand how judgments and expectations follow from the various strategies women employ in authority positions and, further, how these reactions affect their success chances in these positions. We explore this issue by examining women's behavior in a particular setting: the university classroom. We examine the teaching styles of male and female professors and student reactions to these differences.

Men and women may have quite different teaching styles. These differences are likely to conform to notions of sex appropriate behavior. To the extent that traditional female behavior patterns elicit the judgment "incompetent," using that style may lower the students' evaluation of the female professor. Conversely, if she adopts the masculine style, she may incur student hostility and resentment. Demonstrating successful teaching is an important requirement for retaining an academic position. Evidence of this success is often based upon student evaluations. Therefore, any behavior pattern which systematically elicits negative responses from students will seriously harm the job retention chances of women professors. Judgments of incompetency are not the only issue, however. Even if students do not denegrate the competency of women who adopt male styles of teaching, any ensuing hostility would increase the anxiety women professors feel, and this type of anxiety has been found to lower job performance in a myriad of settings.

Further, and more subtly, since the professorial role includes a research and service component, the greater time and energy that the female professor may give to the management of her teaching role will reduce the time and other resources available to her for fulfilling other requirements for tenure. Consequently, she may find retaining her job a more difficult task than that which confronts her male colleague.

These arguments suggest that women professors may encounter job strains men professors do not experience. The "deck may be stacked" against women, reducing their success chances. Thus, even though women are allowed entry into these high level positions, their actual work setting may not be equitable in time/energy demands--not because the institution is discriminating, but because the possibility for women to demonstrate competency in their job performances is limited.

THEORETICAL BASE

Two bodies of research suggest that women in high status positions experience role strain that might complicate their task performance. The first body of literature is the "status inconsistency/role conflict" research (cf.

Stryker and Macke, 1978); the second is the emerging research of sex-differences in communication styles.

The status inconsistency/role conflict literature holds that all individuals play many roles and possess different statuses simultaneously. Often, roles have conflicting expectations and statuses have conflicting prestiges. These conflicts are supposedly problematic for individuals; one cannot possibly perform two opposing behaviors at once (Goode, 1960; Merton and Barber, 1963), nor can one simultaneously respond to two widely divergent prestige attributions (Lenski, 1954; Goffman, 1957; Jackson, 1962). A great deal of research has been directed at documenting the supposedly adverse effects these conflicts have for the individual. (For example, see Burchard, 1954; Jackson, 1962; Gross, _et al_., 1966).

Women professors, a distinct minority, face two types of potential conflict: (1) Role expectations for females (warm, nurturant, supportive, non-assertive) (cf. Sherriffs and Farrett, 1953; McKee, 1959; Lewis, 1972) conflict with the expected behaviors of the university professor (directive, assertive, knowledgeable); (2) The university professor is given a fairly high prestige rating (Hodge _et al_., 1964), while the status, female, has less esteem than the status, male (Hartley, 1959; McKee, 1959; Goldberg, 1968; Fidell, 1970; Pheterson, _et al_., 1971; Mischel, 1974). Thus conflict arises for the women professor in the form of both role conflict _and_ status inconsistency. The mode of resolving these conflicts is crucial. Women who adopt male-typed teaching styles may be strongly resented by the students. On the other hand, women who adopt female-typed styles may be judged incompetent.

The literature on communication styles suggests female-typed behavior patterns are likely to incur incompetency judgments, even when the woman's actual contribution is as great as men's (Eskilson and Wiley, 1976). Men are judged to be more competent in part because of their use of "power" speech

(Thorne, 1979), which includes such male-typed strategies as giving directions, offering opinions, interrupting others, referencing oneself as an authority. Women, on the other hand, will wait for someone else to state their idea and then strongly agree with it, rather than offer the idea as their own. This indirect means of making contributions to the group results in lower competency ratings by group members, even though the woman often has as much influence on the group's eventual decision as do male group members (Eskilson and Wiley, 1976). Other studies have yielded similar results (Meeker and Weitzel-O'Neill, 1976).

Some evidence on elementary and secondary teachers suggests that this sex difference applies to the teaching situation. While men teachers are more achievement oriented, more concerned with idea communication, more authoritarian and give more corrective, sharply critical feedback, women teachers give more positive feedback, encourage and receive more student contributions and continuously refer to student ideas when making or elaborating a point (Griffen, 1972; Good, et al., 1973; Lee and Wolinsky, 1973; Brophy and Good, 1974; Moore, 1977). Thus, men adopt a more aggressive male sex-typed style which emphasizes their own competency, while women adopt a more nurturant, female sex-typed style which deflects attention from their subject-matter expertise (by making extensive use of student contributions). We expect these differences to appear in the university classroom as well.

This style difference on the part of women probably arises partly from their socialization. But the woman may also be reacting to present situational constraints. She may be attempting to "cool out" student resentment arising from her inconsistent statuses of woman and professor. Students may resent a woman professor who adopts an assertive, corrective, masculine teaching style, and may severely sanction teachers who do not conform to their expectations. Hostility, ridicule, and other sorts of student reactions may pressure professors to conform to student preferences.

Much evidence exists that women in all situations are quite strongly resented for being assertive, dominant, directive (Lakoff, 1975; Miller et al., 1975; Walum, 1977). Many studies document the attempt by women to soften their presentation of self to emphasize female qualities while performing male-typed competency tasks (Komarovsky, 1946; Rosen and Aneshensell, 1972; Parelius, 1975). Certainly, the same process is likely to operate for university professors.

The Professor's Teaching Role

University professors have a great deal of flexibility in performing the teaching aspect of their role. Concerns about academic freedom and personal autonomy preclude all but minimal interference. However, there are some ideal standards that most professors adhere to, referred to here as the good teaching model. Behaviors dictated by this model include soliciting student feedback and checking the adequacy of explanations, carefully structuring presentations so they are easy to follow, and correcting any misinformation that might have been conveyed. In the interest of promoting student understanding and motivation, good teachers must also encourage student participation. This participation, sometimes taken for granted at the elementary and secondary levels, may be more difficult at the college level.

In this study, we focus on two aspects of the good teaching model: the structuring of presentations and use of the participatory teaching model. Both are common sense notions of what a good teacher "ought" to do. Norms have it that clear presentations "should be" structured and that students "learn" by participating. Both components are stressed in teacher education as being most effective (Rosenshine and Furst, 1973) and are referred to in practice as being most appropriate (Duncan and Biddle, 1974). If women do have greater difficulty establishing their competency, they may feel more hesitant to deviate from prescribed "good teaching" behaviors; and if they do deviate, their competency may be more difficult to establish. However, women's tendency to use structuring methods because of status anxiety may be off-set by men's generally structured, focused, content-oriented approach to teaching (Good, et al., 1973). Hence, we expected women to use more good teaching behaviors than men, especially those indicating adherence to the participatory model. Some recent evidence shows that women secondary teachers do generate more student participation (Good, et al., 1973; Brophy and Good, 1974) and Thorne suggests that this difference may carry over to the college level, given women's generally "cooperative and symmetrical" style of interaction (1979:18). Therefore, we hypothesized:

> Hypothesis I: Women professors will adhere more strongly to the good teaching model than men professors.
>
> > Hypothesis IA: No significant sex differences will exist in structuring of presentations.
> >
> > Hypothesis IB: Women professors will adhere more strongly to the participatory teaching model than men professors.

Sex Differences in More Optional Teaching Behaviors

Other types of classroom behaviors may not be as normatively preferred and, so, may vary more across individuals, especially by sex. We examine two such categories of behavior--authority management and personalizing in the classroom. Since specific behaviors in these realms may not be more optional, the strategies chosen may reflect sex differences. In particular, the behaviors chosen by women may reflect attempts to "cool out" student resentment of their authoritative, prestigious positions. Hence, we expected greater sex differences in these two types of behaviors.

Authority management. Women's attempts to manage authority in the classroom may lead to a chain of double-binds. First, since they are likely to be responded to in terms of their lesser status, female, they will not be viewed as legitimate holders of authority. Thus, they may receive more challenges to their authority. To be viewed as legitimate, however, may require adopting masculine sex-typed styles of interaction which may, in turn, lead to resentment and punishment (Kanter, 1977). To attenuate those interactions, they may have to increase their feminine sex-typed behaviors. However, in doing so, they may be judged incompetent (Eskilson and Wiley, 1976; Meeker and Weitzel-O'Neill, 1976) and, once again, not legitimately in authority.

Therefore, there are two primary authority issues which women face. First, the establishment of their legitimacy as an authority, and second, the reduction of their appearance as an authority. We expect women to use more of both types of teaching strategies because of the double-bind they face, a problem, in a sense, of establishing their "power and authority" so they may "abolish their power and authority" (Bridges and Wartman, 1975:78).

We consider several possible strategies women may use to legitimize and reduce their authority in the classroom, strategies all concerned with student participation. In addition to facilitating good teaching, certain kinds of student participation can also reduce the professor's authority position in the classroom. First, if students are given a good portion of classroom time, more time than required by good teaching norms, professors reduce the focus on themsleves as the sole source of learning in the classroom. Even more importantly, professors may explicitly give subject-matter authority to the students by encouraging students to make original contributions and then dealing with those contributions at length during the class period. (Again, this level of student participation is more than that dictated by the good teaching model.) This type of student participation acts to include the students as potentially "equal partners" in the pursuit of substantive issues, reducing the focus on the professor as the sole substantive authority. We expect women to engage in more of these behaviors in the university classroom, as they have been found to do so in secondary and elementary classrooms (Good, et.al., 1973; Griffen, 1972).

At the same time, women may use this student participation to legitimate their authority positions. They may assert their right, accorded by their classroom status, to set standards, to evaluate the "correctness" of student input. Women professors, in an attempt to legitimize their authority as they reduce it, may give more evaluative feedback to students. We refer to this dimension of classroom authority as "evaluative authority." Past work suggests that women teachers are indeed more likely to exhibit such classroom behaviors (Lee and Wolinsky, 1973; Good, et al., 1973).

According to the literature, men professors will not experience the same conflicts. Rather, they may experience the opposite problem: they may find that students are too accepting of their authority position so that the participatory model is hard for them to implement. That is, students may feel that men professors are unapproachable because of the role distance between them, based in part on the professor's established authority. However, men professors are not expected to adopt the same authority reduction strategies characteristic of women. It is, after all, quite a different experience to have to reduce one's authority to be approachable than to not have that authority in the first place.

Women are not free to use all types of authority legitimizing techniques, however; in certain instances, they may be more constrained than men. For instance, traditional notions of "appropriate" feminine behavior probably make it more difficult for women to use harsh or embarrassing control techniques, such as public humiliation, ridicule, or harsh reprimands. Since such behaviors clearly contradict expected feminine behaviors, students might strongly resent--and sanction--women who use these techniques. Thus, to the extent that we find such techniques, we expect them to be more characteristic of men than of women.

Based upon all of these considerations, we formulated the following hypotheses:

Hypothesis II: Students will more often challenge the authority of women than of men professors.

Hypothesis III: Women professors will use more authority legitimizing techniques in the classroom.

Hypothesis IIIA: Women professors will more often use authority legitimizing techniques which are not harsh, such as the giving of evaluative feedback to students.

Hypothesis IIIB: Men professors will be more likely to use authority legitimizing techniques which are harsh and embarrassing for students.

Hypothesis IV: Women professors will encourage the type of student participation which reduces their appearance of authority in the classroom.

Hypothesis IVA: Women professors will give more class time to student participation.

Personalizing in the classroom. Women professors, by virtue of their sex role socialization, may also be more interested in creating a warm, nurturing, personal classroom environment. This assertion certainly is supported by findings that women play important expressive roles in groups (Meeker and Weitzel-O'Neill, 1976) and choose person-oriented (as opposed to task-oriented) occupations (Rossi, 1968). We expected to find this same sex difference operating in the classroom, with women giving more attention to the personal, caring, human elements in their interactions and relationships with students. These behaviors, which we call personalizing in the classroom, could include acknowledging student contributions, empathizing with students' struggles to learn the material, sharing personal information about themselves, and referring to certain aspects of the students' personal lives.

These behaviors may serve the same function served by authority reduction techniques; they may "cool out" student resentment of women in such authoritative, prestigeous positions. Hence, they may be essential to the woman's attempts to establish herself in the classroom, in addition to being personally acceptable. However, while such "female-typed" teaching strategies may help to reduce student resentment of women professors, they may not in fact enhance student perceptions of the woman's competency.

Based on these considerations, we hypothesized:

Hypothesis V: Women professors are more likely to personalize their classroom interactions than men professors.

Student Reactions

The role conflict/status inconsistency argument as stated above asserts that behavioral resolutions of such conflicts are guided by the expectations and reactions of significant others. In the case of professors' classroom situations, students are one important set of significant others. Therefore, we expected professors' teaching strategies to be determined in part by student reactions, which can vary along two dimensions: competency and likeability. Students make judgments about both attributes in their professors.

We have postulated that all of the teaching strategies considered above will appeal to one or both of these student sentiments. Good teaching behaviors relate to competency issues, though they may also affect likeability judgments. Students may interpret the structuring of presentations, the checking of student comprehension, the attempt to generate student participation as indicating general concern for students. Hence, the following hypothesis:

Hypothesis VI: Use of good teaching techniques will increase stuent perception that their professors are both competent _and_ likeable.

Authority control (legitimizing) techniques are also expected to increase competency ratings, although harsh control techniques may reduce likeability ratings as well. Hence the following hypotheses:

Hypothesis VII: Use of authority control techniques will increase student perceptions that their professors are competent.

Hypothesis VIIA: Use of harsh control techniques will decrease student perceptions that their professors are likeable.

Authority reduction techniques and personalizations probably enhance the professor's appearance of likeability. However, use of these techniques may lower the professor's competency ratings. Recall the literature (discussed above) which suggests that women are perceived to be less competent because they are less assertive, directive, controlling and more focused on interpersonal relationships (Eskilson and Wiley, 1976; Meeker and Weitzel-O'Neill, 1976; Thorne, 1979). Hence, the following hypotheses:

Hypothesis VIII: Use of reduction of authority and personalizing techniques will increase student perceptions that their professors are likeable.

Hypothesis IX: Use of reduction of authority and personalizing techniques will decrease student perceptions that their professors are competent.

We expected that all of these relationships would be stronger for women professors for several reasons. First, we have hypothesized that all of these behaviors (except harsh authority control) will be more characteristic of women, at least to some extent. Hence, students may expect their women professors to use these behaviors and may more strongly sanction them if they do not. This reasoning applies to likeability and competency evaluations based on good teaching behaviors (Hypothesis VI), competency evaluations based on authority control techniques (Hypothesis VII), and likeability evaluations based on authority reduction techniques and classroom personalizing (Hypothesis VIII). All of these student reactions are expected to be stronger for women than for men professors.

The other hypothesized relationships may also be stronger for women. Student resentment of harsh control techniques (Hypothesis VIIA) may be stronger for women because of common expectations that women are warm and nurturant. Such harsh behaviors may be especially resented in women.

Students may also exaggerate their lower competency ratings of women who personalize and reduce their authority (Hypothesis IV), though for a different reason. If women themselves are assumed to be less competent (Meeker and Weitzel-O'Neill, 1976) and female-typed behaviors are perceived to be less competent, then a combination of the two characteristics may severely lower competency ratings. Hence, we formulated this final hypothesis:

Hypothesis X: All of the relationships specified in Hypothesis VI through IX will be stronger for women than for men.

We turn now to a description and discussion of the methods we employed to explore these hypotheses.

CHAPTER TWO

METHODOLOGY SETTING*

The study was conducted at a large midwestern state university located in a large urban setting. The student body numbered approximately 52,000, the faculty approximately 3500. Many students are state, if not city, residents. These characteristics of the university and the student body should be kept in mind when we discuss our findings about general teaching styles since the styles may be peculiar to large universities with mostly local student bodies.

Related to the size of the university is the size of the classes. Many classes have nearly 100 students; the average class size in our sample was approximately 50. While the effect of class size can be controlled to some extent in our analyses, it cannot be entirely removed since even if students do have some smaller classes, their classroom behaviors will undoubtedly be influenced by their "typical" classroom experience. Hence, students in our sample may be less responsive than students at other types of institutions (e.g., small liberal arts colleges), and professors may lecture more.

These limitations should _not_, however, invalidate our sex comparisons, which are, after all, the primary focus of the study. On the contrary, we can only make such comparisons by looking at men and women professors in similar situations; otherwise, any apparent sex differences may in fact be the result of situational factors. We suspect some commonly held assumptions (such as women being more committed to teaching) are at least partly the result of the different institutions of higher learning in which men and women are likely to be teaching. Women Ph.D.'s, more often at small teaching colleges (Astin, 1969), may only be extremely committed to teaching when they are at these small colleges. Excellent teaching is often a prerequisite for retaining jobs at such institutions. Women at large research-oriented institutions, such as the one studied here, may not be any more dedicated to teaching than men in similar institutions. Our data will shed some light on this possibility. The particular setting used for the study is ideal for another reason; the heavy research-oriented climate of such institutions may be a situation in which women Ph.D.'s have the most difficulty establishing themselves as competent. Hence, this setting may provide the best test of our hypotheses.

---

*Kathleen Schomaker was an additional author of this chapter.

We gathered information on teaching style and its implications with a variety of methodologies. We observed teaching behaviors during class time; we interviewed professors about their teaching situations; we surveyed student reactions to the professors we observed and interviewed. Hence, we have information on what the professors say (the interviews), what they do (the observations), and how their students react. The following pages describe the procedures used to gather this information. Observational and student data were obtained from a sample of 167 professors and their students, while the interview data were obtained from a (largely overlapping) carefully matched subsample of 30 professors. First, the samples are described, then we discuss our procedures.

THE SAMPLE

Observation Sample

To obtain observation and student information from our sample of 167 professors, we designed a sampling procedure that would yield equal numbers of men and women in male-dominated and non-male-dominated departments. We were concerned about equally representing male-dominated and non-male-dominated departments in our sample for several reasons. First, given the popular notion that topics included under the male-dominated rubric are more "objective," permit less student input, require more professor control, we wanted to be certain that this effect was not confounding any sex differences we might observe.

Also, women in male-dominated departments may differ from other women because of their "token" positions (Kanter, 1977). In particular, women in these departments may feel even more status anxiety than other women; any support networks they could draw upon in their work setting would be heavily male. Their students might have more stereotypic or denegrating expectations of them than students in other departments. For all of these reasons, we felt adequate controls for the male-domination of departments would be essential to our analyses, hence, we designed our sample so we would have adequate numbers of both types of professors.

A male-dominated department was defined here as one which had a tenure track faculty composed of 80% or more males. Based on information provided by the Affirmative Action Officer in the university, we decided that using the 20% cut-off point would provide the best numerical distribution of departments into the male-dominated and non-male-dominated categories, while keeping a meaningful substantive distinction intact. Other researchers have used similar criteria (Hesselbart, 1978; Sternglanz, 1979). Actually, only a few non-male-dominated departments had as few as 20% women; most were more than 33% female. Before we began classifying departments as male-dominated, we excluded several types of departments because they were inappropriate for our study. First, we did not include education faculty because their teaching styles may be less influenced by sex differences and more influenced by "good teaching" norms. We also tried to eliminate, as much as possible, professional departments, reasoning that the teaching strategies necessary to communicate professional skills might not be those necessary to communicate basic knowledge. For the same reason, we excluded departments such as physical education and dance. Foreign language departments were also eliminated because of obvious difficulties in observing such classes.

After these eliminations, the male-dominated departments available to us were accounting, anthropology, astronomy, biochemistry, botany, chemistry, classics, computer science, economics, environmental education, engineering mechanics, geography, history, horticulture, journalism, labor and human resources, law, management sciences, mathematics, philosophy, photography and cinema, physics, political science, psychology, zoology. The non-male-dominated departments were black studies, communication, comparative studies in the humanities, English, family and human relations, history of art, home economics education, home management and housing, human nutrition and food management, linguistics, social work, sociology, textiles and clothing.

After so classifying the departments, we selected several departments to serve as our major source of respondents. These departments were the larger ones and represented a good cross-section of departments. We sent letters and consent forms to all full-time tenure-track faculty in these departments, asking them to participate in our study (see Appendix A). The male-dominated departments were chemistry, economics, engineering mechanics, geography, history, horticulture, mathematics, philosophy, physics, zoology; the non-male-dominated departments were black studies, communication, comparative studies, English, family and human relations, sociology, textiles and clothing, home management and housing, human nutrition and food management.

Our goal was to obtain 40 men and women in both male-dominated and non-male-dominated departments. We obtained nearly enough men using this method, even though only 26% of those who received letters agreed to participate (48% did not respond at all, while 26% refused to participate). However, we fell far short of this goal for women, so we sent letters to the women in the rest of the departments listed above, asking them to participate. Nearly 44% of these women agreed to participate. The distribution of our sample on sex and male-domination of department is presented in Table 2-A. Since we did not quite obtain our goal for women in male-dominated departments, our analysis often contains controls for sex and male-domination.

Table 2-A about here

The sample we finally obtained reflects fairly well the rank distribution of faculty in the university (Table 2-B), particularly the distribution (as calculated) excluding instructors. (We included only a few instructors in our sample and these were highly unusual cases--mostly tenured women.) We have slightly over-sampled male assistants and under-sampled male associates, though not to any large extent. Notice that this sex difference in rank distribution is not entirely accounted for by differences in the age distributions. Men are slightly older but not nearly so much as the rank distributions would lead one to expect. Apparently, women move up the ranks in this university more slowly than men (the case in most similar institutions).

Table 2-B about here

Our sample of professors is probably, on the whole, somewhat younger than the total population of professors. Perhaps younger professors are more involved with their teaching (a fact shown below), making them more likely to participate. Obviously, we were less likely to receive cooperation from those who were for some reason uncomfortable about or unconcerned with their teaching, so our sample may be especially unlikely to include poor or totally uncommitted teachers. However, we feel our sample is representative enough to give a good exploratory look at what is happening in university classrooms.

Interview Sample

In order to examine university professors' attitudes and perceptions about their teaching, a purposive sample of fifteen (full-time regular) female professors was selected primarily from the larger sample and matched to fifteen male professors on rank (assistant, associate, full), disciplinary orientation (humanities, social sciences, natural sciences) and sex-ratio of department (male dominated, male tilted, female dominated).[1] The logic behind the sampling was to control for other variables such as stage in career, discipline and sex-ratio which might explain differences in experiences and strategies. That is, the sample was selected so that we could discover if women professors, regardless of rank, sex-ratio, and disciplinary orientation, reported similar experiences, faced similar problems and employed similar management strategies or whether other variables such as rank, discipline, and sex-ratio context overrode the saliency of sex. Hence we selected a female and male professor at each level (assistant, associate, full) from the sciences, male-dominated humanities, non-male dominated humanities, social sciences, and female-dominated disciplines (Home Economics).

In constructing the matched sample we were concerned about the problem of self-selection. That is, we assumed that professors who agreed to be interviewed would be those who were good teachers while those who refused would be poor teachers. However, this expected bias in our sample did not appear. Student evaluations of professors who were interviewed varied widely in regard to judgments of both teacher's likeability and competency. In addition, since every professor who was contacted agreed to participate, no one was "self-selected" out of this sample.

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[1] There were no balanced sex-ratio departments. Female tilted departments (e.g., dance) were excluded because the teaching component radically differs from the liberal-arts format.

We attempted to match men and women within specific departments whenever possible. Since most departments had relatively few women faculty, female professors were selected first and male faculty were matched to them. In matching for female dominated departments the opposite strategy was employed; men were selected first since they were rarer. Unfortunately not every professor who was interviewed was also observed. Matching specifications required us to select from outside our observed sample in three instances (two men in a female dominated department, and one woman in a science department).

METHODS

The methods we have used in this study have been predicated on two primary research principles. First, the general research principle that triangulation, or the use of different methodologies in the understanding of any given social activity, is the preferable research strategy; and second, that the particular research question should dictate the methodology used, rather than vice versa. Consequently, we have used both qualitative and quantitative approaches in this research. We have taken a primarily qualitative approach to the question of what professors say about their teaching, and a primarily quantitative approach to the question of what professors actually do in the classroom and students responses to their teaching. We describe first the methods used for the interview sample, then those for the observation sample and student responses to their professors.

Interviews

We conducted open-ended interviews with 30 professors in order to elicit qualitative descriptive material on several issues: (1) perceptions of students' expectations for men and women professors; (2) perceived role strain in the three areas of interest--good teaching, authority management, and personalizing in the classroom; (3) perceived costs and benefits of role strain;

and (4) strategies and tactics used to reduce role strain. (See the interview schedule in Appendix A).

The open-ended format was chosen for several reasons. First, we were interested in knowing what professors would say about their teaching both for its intrinsic interest and as a way of finding the social psychological process links between the theoretical and the statistical. Qualitative material, therefore, could stand on its own as well as help interpret the quantitative findings. As will be shown later, the interviews did provide a wealth of useful material for that purpose. Second, in an exploratory study such as this one, the open-ended format is especially appropriate. This format permits respondents to give accounts based on their own definition of the situation, rather than merely responding to the researchers' preconceived set of categories. In addition, the open-ended format encourages respondents to add new questions and topics which can then be probed in-depth.

As with any subjective self-report method, the "truth" of the interview material is not known. However, judging from the rapport established during the interviews, ("I want to know how other women (men) manage," "When can we see your results?" "Do other professors experience this?"), the direct presentation of information which was personal and potentially damaging (particularly for the untenured), and the structure of the interview which permitted faculty to volunteer material rather than react to our conceptions, we see little reason to question the credibility of the material. However, we are less concerned with ascertaining the "truth" than with discovering professors' perceptions of their teaching role and attitudes toward that role.

Procedure. For the most part, the interviews were conducted in the faculty member's office and were tape recorded and transcribed. Most of the interviews lasted between one to two hours. Two of the researchers, one a senior-level professor who developed and pretested the interview schedule and then trained the second interviewer, a doctoral-level graduate student, conducted the interviews. Both researchers had considerable prior experience with interview methodology and were apparently successful at avoiding any status-related interviewer effects that might have resulted. Several judges were unable to distinguish, by reading the transcripts, which interviews were conducted by which interviewer. Each researcher interviewed approximately equal numbers of professors of each sex and rank.

Analysis. The transcripts were subjected to a content analysis by the two researchers who conducted the interviews. Using operational definitions for the three major dimensions of the teaching role discussed earlier--authority management, good teaching, and personalizing--indicators of each aspect were established. We used the "constant comparative method" of qualitative analysis to develop these indicators, allowing our categories to emerge from the data (Glaser and Strauss, 1967). Thus, we obtained qualitative material on professors' views of themselves as teachers (which may or may not correspond to their actual classroom behavior), as well as perceptions of their students' needs and attitudes.

Indicators of *good teaching* behavior emerged which tapped the salience of the teaching role for our respondents, as well as their endorsement of the participatory teaching model. Specific indicators included their affective attitude toward teaching, the amount of time they spent preparing for class and discussing classroom episodes, their life involvement in teaching, their desire for student input and student evaluations. Indicators of *authority management* issues included the extent to which students challenged the professors' authority, the strategies they used to deal with these challenges, and other problems they had with authority and role distance. Indicators of *personalizing in the classroom* included the amount of chatting with students before and after class, and the kinds of personal information students shared in class. All of these measures are more fully described in the chapters dealing with each dimension.

Each interviewer analyzed the transcripts separately, coding each person on each of the indicators. Those designations were then checked against each other for consistency of classification. Differences were resolved by discussing the criteria for each category, though such differences rarely occurred, even with the more complex indicators (see the good teaching analysis).

After the transcripts were coded the two researchers conducted independent analyses of the sex, rank, discipline, and sex-ratio variations that were evident in the coded data. Once again interpretations were cross-checked for consistency between the researchers.

In reporting the results of our qualitative analysis we use illustrative quotations from the interviews. In order to preserve the confidentiality of our respondents we have ommitted some parts of professors' statements, substituting our own words in brackets or underlining a blank space. This was necessary because in many departments there were only one or two women at the associate and full ranks, allowing easy identification. Finally, unless otherwise specified, underlined words indicate vocal emphasis by the speaker in expressing his or her ideas during the interview.

Observations

Information on teaching style was obtained with a modification of a direct observation method (Hough and Duncan, no date). The co-principal investigators and the research staff were trained by a competent expert to use the basic method; this expert then consulted with our staff in adapting the system to our particular purpose. We elected to use a version of Hough's method, which is itself a variant of the Flander technique (Duncan and Biddle, 1974), because it provides fairly objective data. Since it is a time unit method of observation, it does not require high inference coding on the part of the observer, but requires instead the coding of activities which occur in each five seconds of class time. Thus, it does not depend upon a highly subjective rating based on the observer's impression. With a subject such as ours, about which many cultural stereotypes exist, a more objective measure was desired. The observers may have expected women to be more supportive or more permissive regarding student input and so may have perceived this difference to occur, whereas a careful count of the amount of time spent in these activities may have produced quite different results. Many experts criticize high-inference observation techniques on just this point and suggest the use of more quantitative, objective methods instead (Rosenshine and Furst, 1973; Duncan and Biddle, 1974).

We use an observer-coding method rather than video-tape or tape-recording to ensure as much as possible a "normal" process uninterrupted by the observer. This method is quite appropriate for use with university professors. In fact, it has been used quite successfully to document the teaching styles of recipients of distinguished teaching awards on this campus.

Adopted Version of the Hough-Duncan Technique

The basic categories for the Hough-Duncan method, plus the subfunctions and subscripts as adopted for this study, are contained in Figure 2-A. Expanded descriptions of these categories immediately follow the figure.

The basic categories are coded S for student and T for teacher (Example: S7 indicates a student solicitation). The original categories are as they were in the basic Hough/Duncan (1978) system, except that we used T2 and S2 for laughter rather than sensing (it's original use). The behavior categories that we coded and their descriptions are as follows:

Substantive Behavior -- Any manifest non-appraising behavior that is intended to facilitate the attainment of new learnings, or sustain or extinguish prior learnings that are considered by those in the instructional situation to be a legitimate part of the subject matter of the field under study.

Figure 2-A

BASIC CATEGORIES

Code Numbers

Substantive	Managerial	Categories of Teacher or Student Behaviors
1	01	Think
2	02	Laugh
3	03	Manipulate Artifacts
4	04	Initiate
5	05	Respond
6	06	Solicit Clarification
7	07	Solicit
8		Judge Correct
9		Personal Positive Judgment
10		Acknowledge
11		Judge Incorrect
12		Personal Negative Judgment

SUBFUNCTIONS*

Code Letters	
A	Accentuated/Dramatic inflection (with substantive) Admonishment (with managerial)
U	Unspoken
UM	Experiential
M	Personalization (may be subscripted "S" or "W"; otherwise applies to students when used with T behaviors)
AM	Ridicule
AUM	Implicitness

SUBSCRIPTS*

C	Challenge to professor by student	
B	Behavior specifically solicited by professor (not used with S5's)	
J	Judgment of partial correctness	
P	Positive reaction	(with subfunction AUM)
N	Negative reaction	
S	Self reference	(with subfunctions M & AM)
W	"WE" reference	
I	Interrupting	
O	Organize, outline, introduce	
R	Review, summation, repetition	
E	Explicit emphasis of particular points	

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*Any basic category may be modified by one subfunction and/or one subscript.

Managerial Behavior -- Any manifest, non-appraising, non-substantive behavior that is intended to create nonsubstantive conditions that facilitate the attainment of new learnings or sustain or extinguish prior learnings (Paper #3, p. 14).

1/01 Thinking -- Definition: Any nonappraisal behavior in which a person is apparently reflecting on (thinking about) some substantive or managerial aspect of classroom instruction (Paper #4, p. 23).

3/03 Manipulating Artifacts -- Definition: Any nonappraisal behavior in which one manipulates (works with) instructional artifacts (curricular-instructional materials) (Paper #4, p. 29).

4/04 Initiating -- Definition: Any spoken, unspoken or mediated nonappraisal behavior that presents substantive or managerial information to another or others. The initiating behavior may be an expression of knowledge and/or an expression of feeling states or value preferences (Paper #4, p. 32).

5/05 Responding -- Definition: Any spoken, unspoken or mediated nonappraisal behavior that responds substantively or managerially to an element in the instructional situation...The responding behavior may be an expression of knowledge, demonstration of a skill and/or an expression of a feeling state or value preference (Paper #4, p. 35).

6/06 Soliciting Clarification -- Definition: Any manifest nonappraisal behavior...that evokes or is intended to evoke from another person the fuller meaning of an antecedent behavior of that other person or a product of her/his behavior...The behavior intended to evoke the fuller meaning may be in the form of a question, direction, or suggestion (Paper #4, pp. 38-39).

7/07 Soliciting -- Definition: Any manifest...nonappraisal behavior that evokes or is clearly intended to evoke substantive and/or managerial behavior from another person in the instructional situation. Specifically excluded here are those behaviors which fall in the category of soliciting clarification (Paper #4, p. 41). For our purposes, we adapted T07 to refer specifically to such behaviors as asking students if they had "any questions."

8 Judging Correctness -- Definition: Any manifest...behavior that responds or reacts to an antecedent behavior of the self or another or to a product of such behavior...by judging the behavior or product...to have been logically, empirically or normatively correct in some degree. Publicly accepted criteria are invoked or could be invoked to support the judgment (Paper #4, pp. 4-5).

9 Personal Positive Judging -- Definition: Any manifest behavior...that responds or reacts to a person..., an antecedent behavior of the self or another, or to a product of such behavior...by expressing a personal, positive judgment about the person, behavior or product of behavior. The criteria for making the judgment are personal... (Paper #4, p. 7).

10 Acknowledging -- Definition: Any manifest...behavior that responds or reacts to a person..., an antecedent behavior of the self or another, or to a product of such behavior...by acknowledging the person, behavior, or product in ways that indicate that the person, behavior, or product has been perceived. No judgment is explicitly expressed (Paper #4, p. 9).

11 Judging Incorrectness -- Definition: Any manifest...behavior that responds or reacts to an antecedent behavior of the self or another or to a product of such behavior...by judging the behavior of the product...to have been logically, empirically, or normatively incorrect in some degree. Publicly accepted criteria are invoked or could be invoked to support the judgment (Paper #4, p. 13).

12 Personal Negative Judging -- Definition: Any manifest behavior... that responds or reacts to a person..., an antecedent behavior..., or to a product of such behavior by expressing a personal negative judgment about the person, behavior or product of behavior. The criteria for making the judgment are personal... (Paper #4, p. 16).

In an effort to further distinguish among classroom behaviors, the basic categories were often modified by subfunctions or subscripts. The subfunctions were as follows:

A -- denotes talk accentuated by dramatic inflection that deviates from the speaker's normal style. With managerial behaviors "A" indicates an admonishment.

U -- indicates an unspoken mode of communication, such as a nod or writing on the blackboard that lasts for at least five seconds with no spoken behavior during the interval.

UM -- indicates in-class experiential activity used as an illustration of a course concept such as performing an experiment, working out a problem, etc. Routine drills over homework are excluded.

M -- denotes a piece of talk in which the speaker is using personal information--i.e., about self or family--to convey or illustrate a point. When used with teacher behaviors unsubscripted, the professor refers to the students' personal lives. References to the professor's life by the professor were subscripted "S" (see below).

AM -- denotes a piece of talk that ridicules another or others.

AUM -- denotes an implicit evaluation in a nonevaluative behavior (while initiating, responding, etc.).

Subscripts are more specific modifers which may be used alone or as further modifiers of a subfunctioned behavior. They are optional to the Hough/Duncan system, but we found them to be essential. They were as follows:

C -- denotes a piece of student talk that challenges the teacher by questioning a substantive point, the authority of the teacher, or a source of information.

B -- indicates a student behavior which is specifically solicited by the teacher but is not a verbal response to a question.

J -- indicates a nonappraisal behavior which involves a partial judgment.

P -- indicates a positive reaction involved in an implicit evaluation (used with subfunction "AUM").

N -- indicates a negative reaction involved in an implicit evaluation (used with subfunction "AUM").

S -- indicates that a statement contains an explicit reference to the speaker's self (used with subfunctions "M" and "AM").

W -- indicates that a statement contains an explicit reference to the communal "we" (used with subfunctions "A" and "AM"). In case of admonishments "W" refers to the group as a whole.

I -- indicates that a piece of talk has interrupted the previous speaker.

*O -- indicates that talk is organizing what is to come, ordering or outlining substance or process, or prefatory in nature.

R -- indicates that talk is giving information in a summary, review, or repeated form.

E -- indicates that a piece of talk is explicitly indicated as containing important information, i.e., it is given emphasis.

To collect teaching style data on a subject professor, one or more members of our staff of trained observers attended what had been previously designated by the professor as a typical class session. We especially avoided observing such atypical sessions as guest speakers, instructional films, group presentations by students, examinations and examination pre- and post-test reviews.

Coding began with the ringing of the bell, or the beginning of the professor's attention to the class as a whole. The classroom process was encoded for the entire 48-minute session unless circumstances such as late arrival or a delayed start by the professor prohibited it. In no case was encoding done for less than 45 minutes, and in no case was this reduction deemed significant for our research. Classes which met for longer periods were encoded for 48 minutes only, from the beginning of the class period.

Observers attended classes as scheduled by an undergraduate administrative research assistant who was not a member of the observer-staff. All follow-up

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[2] These last three categories were developed by Elizabeth Madson, a doctoral candidate in Curriculum and Foundations of Education, who was one of our observers.

contacts required after the initial contact to obtain consent were made by this non-observer assistant. Therefore, subject-professors and observers had no contact prior to the observed class session. Classes were allocated among the observers by a system of mutual agreement within other time constraints with no systematic allocation to any one observer of classes involving a specific gender, academic department, time of day, etc.

Observer reliability. Multiple observers periodically encoded the same class to provide reliability checks. Inter-observer reliability remained at acceptable levels throughout the study. However, due to time constraints, we could not have multiple observers in classrooms very often.

To lend further credibility to our observers, we attempted to show that all (4) observers were perceiving basic category behaviors at roughly the same frequency among similar types of professors. Such an analysis would at least indicate whether one or more of our observers was (perhaps incorrectly) over-using or under-using certain coding categories. Since we expected men and women in male-dominated and non-male-dominated departments to differ, we considered observer effects within these four subsamples. To do so, we performed analyses of variance (ANOVA) within these four categories, which took the proportion of time devoted to certain basic category behaviors as the dependent variable and a 4-category observer variable as the independent variable. A separate analysis was done for each behavior. We only look at "observer effects" on basic categories of behavior because this is, after all, the most critical distinction to be made. These behaviors occurred most often, and the unreported effects on the other (rather numerous) behaviors did not differ substantially from these. Also, these were the kinds of behaviors where we expected the most consistency across observers; other less frequent behaviors (many of the subscript and subfunction behaviors) may have actually occurred less consistently across individuals.

Our ANOVA output yielded the average amount of time each observer recorded each behavior, significant statistical contrasts between these means, and the "F" probability for the overall equation. These probabilities are displayed in Table 2-C.

Table 2-C about here

Looking first at the results for teacher behaviors, there are some behaviors with significant observer effects in each analysis category: 4 effects are significant for men in non-male-dominated departments, 3 for women in non-male-dominated departments, 1 each for women in male-dominated and men in male-dominated departments. The non-male-dominated department members were perhaps more ambiguous to observe.

Two behavior categories--managerial initiation (T04) and judge incorrect (T11) have observer effects in more than one category. T11 observer effects have occurred for women and men in non-male-dominated departments. Table 2-D summarizes observer means and significant contrasts within those two categories.

Table 2-D about here

We do not feel these differences cause difficulties for our analysis, since the actual proportions being compared are small and since this behavior is pooled with other behaviors in our analysis (i.e., T12's). It would be more problematic if the effects were more pervasive across categories (of sex and male-domination) and types of behaviors.

Observer Effects on T04 and T4

Table 2-C shows statistically significant effects of "observer" on T04 (managerial initiating) for women in non-male-dominated departments and men in male-dominated departments and on T4 (initiating) for women in non-male-dominated departments. This behavior is a critical one for our analyses, since it sets the tone for much of the classroom interaction. Observer bias here is critical.

Table 2-E summarizes the observer means and the significant contrasts for the behaviors in these categories. Observers 2 and 3 are at variance here. One observation regarding that is this discrepancy is not true observer bias because it does not appear across all analysis categories. For women in non-male-dominated departments, it appears that observer 3 has systematic reversals of T4 and TO4 behaviors. (This observer confirmed verbally that this distinction was problematic with a couple of professors that fall in this category. Apparently their style was very managerial-substantive mixed.) The troublesome aspect of the TO4 contrasts is that 3 out of 6 contrasts for women in non-male-dominated departments and 4 out of 6 contrasts for men in male-dominated departments are significant. This is the only behavior that shows this amount of observer effect and has occurred despite the high reliability coefficients obtained among observers. Apparently, this is a problem which must be kept in mind in drawing conclusions.

Table 2-E about here

Table 2-C also shows scattered significant effects on student behaviors. Student evaluative behaviors (especially for professors in non-male-dominated departments) seem to be the most problematic, and they are not used often in the analysis. The most important (and most common) student behaviors show no observer effects; they are student responses (S5's) and student questions (S7's). S4's show significant observer effects in two categories of professors (both non-male-dominated). Table 2-F suggests that observer 4 tended to under-report the occurrence of student initiations. Unreported means for S5's showed some tendency for this observer to reverse S5's and S4's. This is the most pervasive difficulty that (apparently) occurred with student behaviors. In general, the scattered effects suggest that the difficulties are not insurmountable. Most of the student behaviors are pooled into composite measures,

Table 2-F about here

so a problem with one observer in one subgroup with one of these behaviors would probably not have much impact on our analysis.

In sum there are some scattered observer effects on the behaviors that might qualify some of our conclusions. However, there are no systematic effects that warrant elimination of either a particular observer or a particular behavior from the analysis. The statistical significance that occurs does not take on substantive significance. Some cautions need to be observed in dealing with behaviors singly, but the underlying problems of behavior category confusion, which is minimal when it occurs, is virtually eliminated by pooling behaviors into constructed variables for analysis. The vast majority of the behaviors were reliably observed.

Measures. The information from the observations was used to construct several measures of behaviors in the three areas of interest--"good teaching" behaviors, authority management, and personalizing in the classroom. All measures indicated the proportion of classroom time given to a certain behavior or certain clusters of behaviors. Recall that the observers recorded classroom behavior in five second intervals, recording the symbol for a given behavior when it first began and making tally marks for each five second interval that the behavior continued. Hence, we have a fairly good count of how many five second intervals there were in each class period and what was occurring during each interval. (Of course, some five second intervals contained more than one behavior and we have no way of knowing the length of any behavior which lasted less than five seconds.) To construct our measures, we simply summed the number of all classroom behaviors recorded for each observation (including all tally marks) that were recorded. Hence, our measures are not strictly proportion-of-time measures; they are some indication of that, but they also indicate the number of times a behavior occurred, relative to all of the different kinds of behaviors which occurred. The latter dimension of our measures should be kept in mind throughout, even though for simplicity, we refer to the variables as proportion-of-time measures; strictly speaking, that is not all they measure.

The good teaching model. Adherence to the good teaching model was measured with three subsets of variables. First, we wished to measure structuring of input. We combined all teacher managerial behaviors into a single variable to indicate the attention each professor paid to managerial issues since this may affect the structure of input and, indeed, the class as a whole. Not included in this variable were T07's (lecturing), managerial solicitations, which were used only for a particular kind of solicitation--a professor asking if there were "any questions." This behavior served as an indicator of limited use of the interactive teaching model, discussed below.

We constructed a second measure of structuring of input by combining all behaviors that were subscripted "O," "R," or "E," our measures of ordering presentations, reviewing, and explicitly emphasizing certain points as being important. We refer to the entire collection of behaviors as ordering presentations because they all seemed relevant to this endeavor. We also used teacher manipulation of artifacts as an indicator of clarity since actually demonstrating a topic of discussion should make a presentation much clearer, and all unspoken behaviors (except evaluative feedback). Again, use of unspoken methods (writing on the board, etc.) should add further clarity. We also considered professors' self-judgments of incorrectness to be an indicator of the extent to which clarity of presentation is a valued goal. (This measure summed all T11's and T12's that were subscripted S.)

A second aspect of our good teaching model involved the quantity and quality of teacher/student interaction--adherence to the participatory model. Certain teacher behaviors represented teacher attempts to elicit student participation and certain student behaviors indicated that student participation was occurring. We divided these behaviors into those which indicated *minimal adherence to the participatory model* and those which indicated *strong adherence to the participatory model*.

The first subset of behaviors, indicating *minimal adherence to the participatory model*, involved several measures. First, we considered the proportion of *teacher initiations* (T4's) to be a negative indicator of use of the participatory model. Other measures seemed to be direct indicators of limited use of the model. Those indicators were proportions of *teacher responses to students* (T5's), *teacher solicitations of clarification* (T6's), and *managerial solicitations*--("Are there any questions?") (T07's). All three of these variables, if used alone, would probably only involve the students minimally in the classroom interaction. These strategies may simply serve to inform the professor of the students' comprehension.

Other measures indicated *strong adherence to the participatory model*; they essentially involved fuller student participation in the classroom and are a combination of all instances where *students manipulated artifacts* (S3's), where professors set up *experiential learning experiences*, and *students participated in the experiential activities* (subfunction UM). We also created measures of teachers' *general solicitations of student input* (T7's) and *student responses to these solicitations* (S5's, subscript B), and *student questions* (S6, S7, S06, S07). We felt all of these behaviors indicated fuller student participation, where students have broader experiences than simply taking notes from lectures or asking for clarification or responding to limited teacher queries.

Several other measures served as indicators of the extent to which a climate was created that promoted motivation and lent itself to a give and take between professor and students. These measures were the proportion of time given to *teacher and student thought* (T1's, S1's, respectively) and teacher and student laughter (T2's, S2's). They may be general indicators of the extent to which student participation was encouraged; they certainly represent interaction patterns that may make the atmosphere more pleasant.

Authority management. Other variables were constructed to measure authority management in the classroom. First, several measures indicated attempts to establish legitimacy as an authority. One way teachers control is by giving evaluative feedback, deciding if a student's contribution is right or wrong. Our basic measure of evaluative authority was a combination of positive feedback (T8 and T9) and negative feedback (T11 and T12). We also constructed a measure of unspoken positive feedback (head nodding, etc.--a summation of all positive feedback--T8's, T9's, T10's--that was subscripted UM).

We also have measures of the harshness of control techniques. To reduce the harshness of evaluative feedback, some professors may qualify these judgments or they may convey them implicitly rather than directly. Hence, we have created measures of partial positive and negative feedback. Partial positive feedback combined all implicit positive judgments (subfunctioned AUM, subscripted P) and all partial positive judgments (subscript J with T8, T9). Partial negative feedback combined all implicit negative judgments (subfunction AUM, subscript N) and all partial negative judgments (subscript J with T11, T12).

We also have a direct measure of harsh control, the amount of ridicule professors used (all behaviors subscripted AM, less those referring to self). We have another measure which may indicate harsh control, though not necessarily; this is a measure of admonishments (managerial behaviors with subscript A). These behaviors could have been harsh disciplinary directives or threats to students, but might also have been milder "please open your books" or "follow the outline as I read it" kinds of statements. Another measure of teacher control which may be a "harsh" interactive technique is the extent to which professor interrupted their students (any T behavior subscripted I).

We also have several measures of attempts to reduce the appearance of authority. Here, we carry the notion of student participation a step beyond that implied by the "good teaching" model. Students may participate in the classroom to increase their motivation and learning experiences. Beyond this, however, they may be treated as full partners in the learning endeavor. Their contributions, and especially their interactions with each other, may be seen as a critical part of the learning process; the professor may yield some of her (his) substantive authority to the students, permitting, even encouraging, students to make independent, original contributions. Under such conditions, students are given more classroom time by the professor and are encouraged to engage in more assertive behaviors in the classroom. We refer to this dimension as subject-matter authority.

To measure this concept, then, we used student behaviors. First, we combined all student participation into a total measure to indicate the amount of time students are given. Then, we constructed several variables measuring the assertiveness of students; we constructed a measure of student challenges (all student behaviors subscripted C), student evaluative statements (S8, S9, S11, S12), and student assertiveness (evaluative statements plus initiations--S4's). These variables all indicate the extent to which students played an independent role in the classroom. Another measure of student assertiveness was student interruptions (all S behaviors subscripted I); sometimes, students interrupted each other, but most interruptions involved the professors.

Personalizing in the classroom. We also constructed measures of personalizing in the classroom. A general personalization variable was constructed, which summed all professor references to the personal lives of the students or their own (all teacher behaviors with subfunction M). We then created separate variables measuring professors' references to self (subscript S) and to students (the original variable less references to self), as well as a measure of all student personalizations (all student behaviors subscripted S or W, excluding negative judgments). These variables indicated the extent to which the classroom environment permitted or encouraged the sharing of private experiences.

Two further indicators of the extent to which professors created personal classroom atmospheres were acknowledgements of student contributions, which might include thanking the student, referring back to the student's idea, using the student's name (T10's), as well as a measure of professor's empathizing with the students, involving statements such as "I understand this is hard for you," or some other statement of understanding (T10M's). These behaviors seemed directed at enhancing the personal, intimate quality of classroom interaction. They involve professors and students in interactions based on needs for respect, and intimacy and they permit more personal contact than normative definitions of the professor/student roles prescribe.

Observer impressions of classroom atmosphere. In addition to the behaviors observed and coded during the classroom period, the observers also recorded their general impressions of the professor's tendency to (1) remain stationary or move around during class , (2) maintain eye contact with the students, (3) extemporaneously talk to the class or rely almost exclusively on notes, (4) include discussion in the class format or use only a lecture presentation, (5) create a casual classroom climate or maintain a formal atmosphere, (6) use a varied presentation style or engage in monotonous presentations, and (7) keep the students' attention. Dummy variables were created, scored 1 if the professor remained stationary, lost eye contact, spoke extemporaneously, used a discussion format, created a casual climate, used a monotonous presentation style, and retained the students' attention, and 0 otherwise. Since these variables do not represent the hopefully more "objective" information we have on teaching styles, we used them only in a brief, introductory analysis reported in Chapter Three. Their relationship to student evaluations did, however, improve the credibility of our observers. Apparently, our observers were sensitive to aspects of the teaching situation that had important effects on the students.

Student Evaluations

Student reactions to these classroom behaviors were assayed through a questionnaire administered at the end of the term to each class observed. We asked five questions that appear on a standard evaluation form (designed to measure perceived competence), plus another question about logic, several questions about the likeability of the professor, and a question asking if the professor is sometimes "too authoritarian." A summary of these evaluation items appears in Figure 2-B; the complete questionnaire is available in Appendix A. Students responded to these items on a 5-point scale ranging from strongly agree (1) to strongly disagree (5).

Figure 2-B about here

Students were also asked several background questions such as sex, grade point average, grade expected in course, major area of study, prior experience with female professors. These background factors did not differ by sex of professor, with a few exceptions. Women professors tended to teach somewhat smaller classes and to have fewer natural science majors. Women professors also had more students with previous experience with female instructors.

Since we were concerned that students may react differently to men and women professors, we first checked for possible sex differences in competence and likeability. It was gratifying to discover that, on the average, these professors were judged highly competent and likeable and no significant sex differences appeared (Table 2-G). Past studies have yielded similar results (Ferber and Huker, 1975; Hesselbart, 1978; Barnett and Littlepage, 1979).

Table 2-G about here

Next, we were concerned that these items truly measured the two dimensions of competency and likeability they were intended to measure. An orthogonal factor analysis (Table 2-H) shows that to some extent, this was the case for the entire sample. Competency items tend to load more highly on Factor 1 (several load on Factor 3) and the likeability items load more highly on Factor 2. (Factor 3 was not significant, indicated by an eigenvalue of less than 1, and so may be discounted.) This tendency becomes even stronger if we consider these items as they factor for male and female professors separately. For women professors (Table 2-I), these factors are more distinct, while for men professors (Table 2-J), some competency items appear on the "affect" factor and vice versa. Apparently, students do not differentiate these two dimensions as carefully for men as for women professors; judgments of likeability and competency are not made quite as separately. Hence, in further analyses, we construct separate student evaluation scales for men and women professors. The reliability of these scales were: (1) .91 for the men's competency scale, which included items 1, 3, 4, 6 and 7; (2) .91 for the men's likeability scale, which included items 2, 5, 10 and 11; (3) .96 for the women's competency scale, which included items 1, 2, 3, 4, 5, 6 and 11; (4) .94 for the women's likeability scale, which included items 7, 9 and 10. Notice that we have deleted the item asking if the professor was "too authoritarian" (item 8) from all scales; a reliability analysis suggested that the scales would be more reliable if this item were deleted. However, we did use the "too authoritarian" item in separate analysis of authority management behaviors.

Table 2-H about here

Table 2-I and 2-J about here

Mean differences on these scales for men and women in male-dominated and non-male-dominated departments are presented in Table 2-K. Men in non-male-

Table 2-K about here

dominated departments were judged both more competent and more likeable than men in male-dominated departments, while a much smaller difference (though in the same direction) exists between the two groups of women. We will explore the dynamics of these evaluation differences more fully later in this report.

ANALYSIS OF QUANTITATIVE DATA

Classroom Interaction

After constructing our measures from the observational and student data, we analyzed the data looking for (1) sex differences in classroom behaviors and (2) the implications of these differences for student evaluations. Our analysis techniques consisted of mean comparisons, zero-order (Pearson) correlations, and regression equations. For most of our analyses, we considered sex differences, though in some preliminary analyses (Chapter Three) we did not.

Sex differences in classroom behaviors. For each set of behaviors--good teaching, authority management, and personalizing--our analysis first considered the sex differences in these behaviors. We expected women professors to use somewhat more "good teaching" techniques and many more authority control and authority reduction techniques, as well as more personalizing. We expected men to use more of the harsher authority control techniques and to spend more of their classroom time presenting basic lecture material. We also thought men might be as likely as women to structure their material during presentation.

We were concerned that these sex differences would be more or less prevalent for those in male-dominated and non-male-dominated departments. Hence, we began our examination of sex differences by looking at mean differences in the behaviors among men and women professors in male-dominated and non-male-dominated departments. Looking at differences across these four subgroups showed more interesting patterns than looking only at the differences between men and women. However, no consistent pattern of differences emerged, although women in non-male-dominated departments were somewhat more likely to exhibit the most "female-typed" strategies in the classroom. (Some important exceptions to this generalization were found, however.) Also, tests for significant interaction between sex and male-domination of department on the incidence of these behaviors were generally not significant. That is, while the patterns generated by considering a four-way sex by male-domination of department difference were interesting, this four-way difference was not statistically significant. The important significant difference was still between men and women, regardless of the sex-ratio of their department.

To estimate the extent to which sex and sex-ratio of department had independent, additive effects on the behaviors we observed, we estimated regression equations predicting the proportion of time these behaviors occurred in the classroom; these equations included measures of sex (1 = female) and sex-ratio (1 = male-dominated). They also included controls for the professor's rank (an ordinal measure ranging from 1--Instructor--to 4--Full Professor), course level (an ordinal measure ranging from 1 to 9, with 1 designating 100 level or freshmen courses), and the size of the class (estimated by the observer, broken into 6 ordinal categories). We simply wished to remove these possibly confounding influences from our analysis. No specific pattern of effects emerged for these control variables. Therefore, their effects are rarely discussed. One equation was estimated for each measure of teacher and student behavior described above.

These equations more precisely estimate the extent to which men and women differed in these behaviors and the extent to which those from male-dominated and non-male-dominated departments differed. For instance, the coefficient for sex will tell us the extent to which women professors are more or less likely to engage in these behaviors or elicit certain behaviors from their students. Likewise, the coefficient for male-domination of department will tell us the extent to which those from male-dominated departments were more likely to engage in these behaviors. Because these equations estimated these effects independent of possibly confounding influences (the control variables), these results are used to determine the statistical significance of the observed differences.

The test for the statistical significance of the interaction between sex and male-domination of department (mentioned above) was performed with these equations. We simply re-estimated the equations adding a multiplicative interaction term between sex and male-domination. Since these interactions were rarely significant, they were not presented but were discussed in each of the findings chapters. As stated, the lack of significance assured us that while mean differences across the four groups were interesting, the apparent interaction, because it was not significant, did not invalidate the regression approach, where sex and male-domination were treated as additive variables.

Classroom behaviors and student evaluations. We next considered the impact of these behaviors on student evaluations. We considered the impact of behaviors in all three domains--good teaching, authority management, and personalizing--on the student evaluation scales measuring competency and likeability. We also considered the impact of authority management strategies on the "too authoritarian" evaluation item.

We first estimated zero-order (Pearson) correlations between the evaluation scales and each behavior variable. (We sometimes present correlations between behaviors and the individual evaluation items, also.) These correlations were estimated separately within our four sex by male-domination subgroups. (Separate competency and likeability scales were used for men and women in this analysis.) While these results showed interesting differences among these four groups, the sample sizes were very small, making the results somewhat suspect. Certainly, a regression approach would not have been appropriate within these four subsamples. Also, we are concerned that since we have observed so many correlations, we have simply obtained several significant correlations by chance. This possibility will be discussed more fully in the conclusions.

To estimate the impact of these behaviors on student evaluations net of confounding influences, regression equations were estimated that predicted the evaluation scales (and "too authoritarian" in the authority management chapter). Predictors included various groupings of relevant classroom behaviors (care being taken so that no two variables with overlapping behaviors were included in the same equation). Preliminary analysis suggested the necessary controls: class size, male-domination of the department, and the proportion of the students in each class who were female (calculated from students' responses to "sex" on their questionnaires). Contrary to the regressions predicting classroom behaviors, the control variables in these equations showed consistent and interesting patterns of effects, and so they are frequently discussed in the analysis chapters. These equations were estimated separately for men and women professors, since we expected students to respond differently to men and women. For instance, we thought it possible that students would resent harsh authority control on the part of women professors but take it for granted on the part of men. Or, students might resent women professors who did not personalize in the classroom but take this lack of personalizing for granted in men. Estimating these equations separately by sex allowed us to consider this possibility. (Indeed, we found several interesting differences.) We could not estimate these equations within categories of sex and male domination of department because the sample sizes were too small.

The next four chapters present our results. Chapter 3 gives general information on the teaching styles and student reactions in the sample as a whole. The following three chapters focus on sex differences--Chapter 4 on "good teaching," Chapter 5 on authority management, and Chapter 6 on personalizing.

Figure 2-B

Items from Student Survey

1. The instructor was well prepared for class.
2. The instructor had a thorough knowledge of the subject.
3. The instructor communicated the subject matter well.
4. The instructor stimulated interest in the course subject.
5. The instructor is one of the best OSU teachers I have known.
6. The instructor presented the material in a logical manner.
7. This instructor was responsive to student input.
8. This instructor was generally very considerate of students.
9. If given the opportunity, I would like to know this instructor more informally.
10. Compared to most other female/male instructors, this one is among the best.
11. In general, I would rather be taught by male than female instructors.

Table 2-A

Sex and Male-domination of Department Distribution of Sample

	Male-dominated	Non-male-dominated
Sex		
Females	31	40
Males	57	39

Table 2-B

Comparison of Rank Distributions of Sample and Population
Age Distribution of Sample
by Sex

	Females		Males	
	Sample	University	Sample	University
Rank				
Assistant	61.2%	63.3%	24.6%	36.2%
Associate	23.9%	25.7%	34.1%	27.4%
Full	14.9%	11.0%	41.3%	36.4%
Age				
20's	18.3%		7.3%	
30's	42.3%		38.5%	
40's	19.7%		32.3%	
50's	19.7%		17.7%	
60 and over	---		4.2%	

Table 2-C

ANOVA "F" Probability Values Testing for Observer Effects--Teacher Behaviors

	Women Non-male-dominated	Men Non-male-dominated	Women Male-dominated	Men Male-dominated
T4	.0351*	.2167	.5362	.6697
T5	.3630	.0323*	.4452	.7644
T6	.4979	.1991	.4682	.2614
T7	.5508	.0787	.9532	.3021
T8	.1595	.3213	.5008	.2861
T9	.2679	.0975	.1925	.3849
T10	.6903	.2893	.5817	.9552
**T11	.005*	.0156*	.1097	.2661
T12	.0581	.0093*	.6242	.1726
T03	.1683	.3566	.0098*	.2176
**T04	.0115*	.6793	.9649	.0450*
T05	.0986	.5965	.0992	.3054
T06	.0836	.0068*	.1479	.1817
T07	.5872	.658	.8786	.5673
**S4	.0002*	.0192*	.2412	.2280
S5	.5813	.4275	.3594	.7617
S6	.3084	.354	.0413*	.0711
S7	.7085	.4179	.3610	.6751
S8	.1208	.0490*	.3958	.2277
S9	---	.0257*	---	.5838
S10	.0000*	.1492	.0581	.3072
S11	.1374	.0067*	.2066	.5782
S12	.0549*	.2312	.2523	.2580

* $p \leq .05$

**More than one category with significant observer effect

Table 2-D

T11 and T12 Observer Means and Significant Constrasts Within Analysis Categories with Significant Observer Effects

	Women - Non-Male-Dominated				Men - Non-Male-Dominated			
			Signif. Contrasts				Signif. Contrasts	
	Group	Means	Groups	"T" Prob.	Group	Means	Groups	"T" Prob.
T11	1	.0098	1 + 3	.018	1	.0074	1 + 3	.052
"	2	.0047	1 + 4	.023	2	.0045		
"	3	.0014	2 + 3	.009	3	.0017		
"	4	.0023			4	.0020		
T12					1	.0000	1 + 4	.054
"	"F" Not significant				2	.0052		
"					3	.0019		
"					4	.0005		

Table 2-E

T4 and T04 Observer Means and Significant Contrasts
Within Analysis Categories
With Significant Observer Effects

	Women - Non-Male-Dominated				Men - Non-Male-Dominated			
			Signif. Contrasts				Signif. Contrasts	
	Group	Means	Groups	"T" Prob.	Group	Means	Groups	"T" Prob.
T4	1	.4732						
"	2	.4303	2 + 3	.004	ANOVA "F" not significant			
"	3	.7060*						
"	4	.5399						
T04	1	.0597	1 + 3	.052	1	.0004	1 + 2	.000
"	2	.0534	3 + 4	.004	2	.0337	1 + 3	.033
"	3	.0037*	2 + 3	.001	3	.0141	1 + 4	.000
"	4	.0348			4	.0290	2 + 3	.012

Table 2-F

S4 Observer Means and Significant Contrasts Within Analysis Categories with Significant Observer Effects

Women - Non-Male-Dominated				Men - Non-Male-Dominated			
		Signif. Contrasts				Signif. Contrasts	
Group	Means	Groups	"T" Prob.	Group	Means	Groups	"T" Prob.
1	.0562	1 + 4	.045	1	.0374	1 + 4	.052
2	.0241	3 + 4	.047	2	.0164		
3	.0146	2 + 4	.002	3	.0297		
4	.0015			4	.0045		

Table 2-G

Mean Evaluation Scores
by Sex

Professor is:			Sex of Instructor	
			Males	Females
COMPETENCE	1.	Prepared	1.49	1.57
	2.	Thorough	1.38	1.41
	3.	Able to communicate ideas	1.95	2.02
	4.	Stimulating	2.08	2.08
	5.	One of best instructors	2.52	2.47
	6.	Logical	2.00	2.02
LIKEABILITY	7.	Responsive to students	1.89	1.83
	8.	To authoritarian	3.55	3.56
	9.	Considerate of students	1.85	1.82
	10.	Someone I would like to know know informally	2.36	2.21
	11.	One of the best same-sex instructors	2.38	2.25

Table 2-H

Results from Orthogonal Factor Analysis
for Evaluation Items
Whole Sample

		Competency	Likeability	Competency II
1.	Teacher prepared	.804	-.066	.249
2.	Teacher has thorough knowledge	.142	.211	.868
3.	Teacher communicates well	.923	.231	.175
4.	Teacher is stimulating	.845	.366	.117
5.	One of best teachers at OSU	.617	.433	.580
6.	Teacher presentations are logical	.883	.144	.163
7.	Teacher responsive to students	.229	.846	.361
8.	Teacher too authoritarian	.019	-.821	-.174
9.	Teacher considerate of students	.587	.665	-.197
10.	Want to know teacher informally	.304	.702	.491
11.	Best male/female teacher have had	.534	.539	.557

Eigenvalue

Factor 1	6.601
Factor 2	1.673
Factor 3	0.927

Note: Factor loadings of .30 or greater are considered to be significant; they are underlined.

Table 2-I

Results from Orthogonal Factor Analysis
of Evaluation Items
Women Professors

	Competency	Likeability
1. Teacher prepared	.865	.037
2. Teacher has thorough knowledge	.854	.016
3. Teacher communicates well	.827	.460
4. Teacher is stimulating	.721	.623
5. One of best teachers at OSU	.852	.491
6. Teacher presentations are logical	.808	.373
7. Teacher responsive to students	.345	.869
8. Teacher too authoritarian	.061	-.808
9. Teacher considerate of students	.315	.880
10. Want to know teacher informally	.495	.739
11. Best male/female teacher have had	.800	.538

Eigenvalue

Factor 1	7.559
Factor 2	1.606

Note: Factor loadings of .30 or greater are considered to be significant; they are underlined.

Table 2-J

Orthogonal Factor Analysis
for Student Evaluation Items
Men Professors

	Competency	Likeability
1. Teacher prepared	.850	.006
2. Teacher has thorough knowledge	-.039	.771
3. Teacher communicates well	.950	.182
4. Teacher is stimulating	.888	.214
5. One of best teachers at OSU	.548	.713
6. Teacher presentations are logical	.909	.097
7. Teacher responsive to students	.192	.910
8. Teacher too authoritarian	-.022	-.767
9. Teacher considerate of students	.629	.243
10. Want to know teacher informally	.254	.903
11. Best male/female teacher have had	.433	.827

Eigenvalue

Factor 1	5.945
Factor 2	2.447

Note: Factor loadings of .30 or greater are considered to be significant; they are underlined.

Table 2-K

Means and Standard Deviations of Evaluation Scales by Sex and Department of Professor

	Men in Male-Dominated Dept.		Women in Male-Dominated Dept.		Men in Non-Male-Dominated Dept.		Women in Non-Male-Dominated Dept.	
	Means	St. Dev.	Means	St. Dev.	Means	St. Dev.	Means	St. Dev.
Women Competency	---	---	13.763	3.817	---	---	13.850	3.699
Women Affect	---	---	6.013	1.470	---	---	5.759	1.320
Men Competency	14.641	3.446	---	---	13.748	3.017	---	---
Men Affect	8.969	2.511	---	---	8.143	1.648	---	---

CHAPTER THREE

A PRELIMINARY LOOK AT TEACHING BEHAVIORS

Before analyzing sex differences in teaching attitudes and behaviors, we will present a brief overview of the typical teaching behaviors of our observational sample and report the typical student evaluations of those professors. These data set the stage for the comparative analysis of male and female professors.

Typical Teaching Style

When we consider the three constructs which have informed this study--good teaching, authority management and personalizing, we find that a typical teaching style is evident among the university professors we observed. Table 3-A presents the proportion of classtime spent in various behavioral indicators of these constructs.

Table 3-A about here

Professors, as will be discussed later in detail, claim to highly endorse the participatory model of good-teaching. Classes are labelled "dull" or "difficult" when student participation is lacking. Yet, typically, based on our observations, the overwhelming majority of classtime--71%--is used by professors to order and convey information. More than two-thirds of classtime (67.4%) was used for lecturing and another 3.6% of the time was devoted to managerial behaviors (at least partially designed to enhance the orderliness of the presentation). Little time (2.2%) is given to managing authority or to professors' attempts to personalize the classroom (3.6%).

Students do participate. Nearly 12% of the classtime is direct student input, 8.7% of the time is used by professors to respond to student questions, and another 4.4% is spent evaluating and acknowledging student contributions. Thus, the typical class includes interaction between the student and the professor, although little of that interaction stems from independent student contributions. Thirty-six percent of all student participation was in response to teachers' solicitations, and another 22% was in response to professors' questions. Challenges, interruptions and other instances of student assertiveness account for approximately 10% of student input, or 3% of the total classtime.

The typical classroom we observed, then, was structured by the professor and could be described as falling into the category of "good teaching" behaviors. Lecture presentation predominated with a fair (but not overwhelming) amount of student participation. Students participated primarily in response to professors' requests that they do so.

Depending on one's standards for how much and what kind of participation constitutes "good teaching," classrooms in our sample can be viewed as "overly" controlled or "open" to student input. The reader will recall that student enrollments in typical classes are large and occasionally huge (300-400), especially in the lower division classes. This creates structural constraints to student participation and socializes them to non-participation (see Chapter Two). The fact that students participate as much as they do, perhaps, attests to the strength of the concern that faculty expressed in the interviews that student involvement is desirable and, if necessary, must be "struggled for."

Typical Student Evaluations

Students, the reader will recall, rated their professors on eleven items on a 5 point scale (1-strongly agree to 5-strongly disagree). Table 3-B gives the average student ratings for these items. In general, the students evaluate their professors highly. By and large, students see their professors as both

Table 3-B about here

competent and likeable. The lowest average evaluation score falls between 2 and 3 (neutral and agree), while the highest falls close to 1 (strongly agree).

Table 3-B also shows the impact of one classroom contextual feature--the sex composition of the students. The higher the proportion of female students, the higher the evaluation of the professor. This may be a function of greater "compliance" or "politeness" on the part of female students, or it is possible that professors who teach predominately female classes are, on the average, actually more competent and more likeable than their colleagues who teach predominately male classes. Since high female enrollments exist in the social sciences and humanities courses, professors who are teaching in these areas may actually be more "people-oriented" than their colleagues in the natural sciences.

Not only does a high concentration of male students reduce the evaluations of professors, it has differential effects on male and female professors. Female professors with few female students are more likely to be judged less competent but more likeable than their male colleagues. Perhaps, because a high concentration of male students are likely to be found in natural sciences courses, the competence of the few women who teach in these departments may be under extreme scrutiny by their students.

When we correlate particular teaching behaviors with student evaluations, we find that students consider their professors competent and likeable, regardless of their specific teaching behaviors. Table 3-C presents the relationships between basic category behaviors and the student evaluation scales.

Table 3-C about here

However, student participation did have an impact on student evaluations of their professors, especially on the likeability scale. Students liked professors more when the participatory model was used; they did not like professors who failed to use this model (although students did not judge those professors as less competent). In general, however, variations in specific behaviors were not important shapers of student evaluations.

Less specific behaviors, however, did have an impact on student evaluation. The reader will recall, observers coded some general aspects of the classroom atmosphere and the professor's style. The relationship between these variables and student evaluations are presented in Table 3-D. Professors with more eye contact, who extemporaneously delivered information, avoided strict lecture presentations, and created a casual classroom atmosphere were judged to be most competent. Professors were liked more when they kept the students' attention, delivered information extemporaneously in a varied speaking style, and created a casual classroom climate. These effects held fairly constantly for both sexes, though unreported analyses show that most of these effects were stronger for men. Women professors received more negative consequences, however, when students were disruptive and unattentive.

Table 3-D about here

These results indicate that students were not completely oblivious or indifferent to teaching strategies. The more general aspects of these strategies seemed to be the critical factor, rather than the more specific behaviors. Specific behaviors are more likely to vary from day to day than these more general styles. Since we only observed one class period, our measures of more specific behaviors may be less reliable than our measures of general classroom/teaching attributes. If our more specific measures do less adequately represent a professor's usual behavior, the correlations would, of course, be attenuated. While the stronger effects of the more general characteristics attest to the reliability of both our coders and our evaluation items, we concentrate in the remainder of this report on the more specific classroom behaviors. They are, after all, the major focus of this study.

Table 3-A

Proportion of Classroom Time Spent in Selected Activities*

Good Teaching Behaviors	
Teacher presenting material	67.4%
Teacher ordering presentations	8.7
Teacher managerial behaviors	3.6
Teacher manipulating artifacts	0.8
Teacher unspoken presentations	0.8
Teacher soliciting clarification	1.3
Teacher responding to students	8.7
Teacher asking for questions	2.1
Teacher giving experiential presentations	0.3
Students engaging in experiential activities	0.6
Students manipulating artifacts	0.3
Professors soliciting general input	3.7
Student responses to solicitations	4.3
Student questions	2.6
Teacher thought	0.3
Student thought	0.6
Teacher laughter	0.2
Student laughter	1.2
Authority Management Behaviors	
Positive evaluations	2.2
Negative evaluations	0.6
Teacher Interruptions	0.2
Admonishments	0.2
Professor self-judgments of incorrectness	0.2
Total student participation	11.8
Student assertiveness	1.8
Student challenges	0.3
Student interruptions	0.2
Personalizations	
Teacher personalizations	2.0
Teacher personalizations with referrent to students	1.3
Student personalizations	0.5
Teacher acknowledging students	1.4
Teacher empathizing with students	0.2

*These percentages do not sum to 100% because there is some overlap between variables and not all coded behaviors are included here.

Table 3-B

Mean Evaluation Responses by Sex of Professor and Sex Composition of Class

	Whole Sample	Hi Female Concentration Males	Hi Female Concentration Females	Lo Female Concentration Males	Lo Female Concentration Females
Teacher Prepared	1.52	1.39	1.52	1.54	1.66
Thorough Knowledge	1.39	1.41	1.35	1.37	1.54
Communicates Well	1.98	1.79	1.96	2.03	2.14
Is Stimulating	2.08	1.92	2.05	2.16	2.14
One of Best Teachers at University	2.50	2.43	2.39	2.55	2.62
Presentations are Logical	2.01	1.89	2.00	2.05	2.08
Responsive to Students	1.87	1.85	1.81	1.91	1.88
Too Authoritarian	3.55	3.48	3.59	3.52	3.60
Considerate of Students	1.84	1.71	1.82	1.92	1.84
Want to Know Teacher Informally	2.30	2.38	2.17	2.35	2.29
Best Male/Female Professor	2.33	2.31	2.22	2.41	2.31

Table 3-C

Zero-order Correlations of Good Teaching Behaviors
with Student Evaluation Scales

	Competency	Likeability
Presentation of material	-.063	-.078
Ordering presentations	-.003	.081
Unspoken presentations	.024	-.009
Managerial behaviors	.116	.052
Manipulating artifacts	-.039	-.040
Checking student understanding	.004	.067
Solicitation of clarification	.056	.015
Responses to student questions	-.049	-.014
Solicitation of student input	.034	.064
Experiential presentations	.076	.136*
Student experiential activities	-.008	.009
Student manipulating artifacts	-.022	-.049
Student responding to solicitations	.103	.132*
Professor thought	-.066	.003
Student thought	-.077	-.030
Professor laughter	-.049	-.016
Student laughter	.039	.094
Positive judgements	.017	.076
Negative judgements	.031	.036
Acknowledgements	.129*	.259*
Student presenting material	-.033	.059
Student requests for clarification	.050	.194*
Student questions	-.017	-.144*
Student positive evaluations	.130*	.131*
Student negative evaluations	.049	.091
Student acknowledgements	-.025	.038

*Coefficients significant at .05 level.

Table 3-D

Zero-Order Correlations Between General Teaching Strategies and Classroom Atmosphere and Student Evaluations

	Instructor Station ry	Eye Contact	Extempor-aneous	Discussion Style	Casual Climate	Students Attentive	Monotonous Style
Entire Class							
Teacher Prepared	-.006	-.116	.051	-.085	.052	.138*	-.146*
Teacher has Thorough Knowledge	-.073	.084	.185*	-.009	.023	.056	-.238*
Teacher Communicates Well	-.029	.037	.136*	.090	.184*	.136*	-.219*
Teacher is Stimulating	-.044	.109	.136*	.127*	.267*	.136*	-.255*
One of Best Teachers at	-.026	.156*	.192*	.123*	.156*	.112	-.289*
Teacher Presentations are Logical	-.001	-.022	.101	.059	.117	.096	-.151*
Teacher Responsive to Students	-.063	.304*	.222*	.209*	.218*	.067	-.278*
Teacher Too Authoritarian	-.048	-.216*	-.130*	-.175*	-.162*	.000	.144*
Teacher Considerate of Students	.027	.125*	.095	.119	.270*	.068	-.200
Want to Know Teacher Informally	-.066	.222*	.159*	.158*	.182*	.104	-.320*
Best Male/Female Teacher Have Had	-.009	.208*	.232*	.110	.135*	.139*	-.381*
Affect Scale	-.041	.250*	.183*	.185*	.250*	.090	-.304*
Competency Scale	-.031	.094	.181*	.086	.168*	.138*	-.292*

CHAPTER FOUR

SEX DIFFERENCES IN "GOOD TEACHING"

We conceptualize "good teaching" (as discussed earlier--Chapters 1 and 2), along two dimensions: (1) structuring of presentations and (2) adherence to the participatory model. The first dimension refers to techniques and strategies through which the professor orders, organizes and manages the presentation of material, including his/her questions designed to check whether the students have understood the material. Common sense notions of "good teaching" require that the professor communicate "knowledge" clearly to the students. The second dimension refers to the techniques and strategies professors use to create a classroom atmosphere in which students are active participants. Although there is no "requirement" that professors adhere to an interactive mode of teaching, it is the normatively expected style, and presumably increases the investment of the student in the learning process. Since such investment is valued positively in the academic community, techniques demonstrating adherence to the participatory model are a part of "good teaching."

Adherence to the participatory model is a complex issue, and adherence to it may, in fact, overlap with the professor's structuring of presentations. For example, a professor may organize the classroom presentation in such a way as to facilitate student feedback. The feedback may be used as a check on whether the professor is communicating with the class; but it may also be used as a way of involving students in their education. Recognizing the potential overlap, we have nevertheless decided to consider any input from the students as use of the participatory model. However, because of this complexity, we have conceptualized adherence to the participatory model in terms of degree.

Minimal adherence to the participatory model refers to exchanges which require minimal feedback from students, such as the "recitation" of the "right" answer or the assent to a question such as, "Do you understand?" Such behaviors suggest an adherence to the "form" but not to the "spirit" of participatory education. The "spirit" of participatory education is found in classrooms managed by professors who have a strong adherence to the participatory model. In such classrooms, for example, professors engage their students in exploring ideas about the material, in asking questions, and sharing opinions. They create classroom climates, such as through the use of humor, that are "pleasant" and "warm." Their pedagogy may be experiential such that students examine artifacts being described, flip coins to "see" probability theory, engage in sociodramas, mock-debates, etc. These behaviors--the encouragement of students' ideas and opinions, the use of humor and experiential teaching methods--we view as examples of strong adherence to the participatory model of good teaching.

Our interview material allows us to explore the levels of commitment to good teaching held by male and female professors and its meaning to them, whereas our observation data permit us to examine sex-differences in actual behavior. More specifically, the interview material permits us to assess the saliency of the teaching role to professors, their claimed commitment to structuring material and encouraging student participation, their use of humor, and an additional concept related to the participatory model, namely, whether the professor's classroom focus is on the professor or on students.

The observational data contain indicators for nine behaviors classified as structuring of presentation. (Also, see Chapter Two.) Each of them are behaviors likely to lend structure to the professor's presentations and to make communication clearer, but require no interaction with the students. There are three indicators of minimal adherence to the participatory model, and eleven for strong adherence to the participatory model. All of the classroom indicators of good teaching have been discussed previously in Chapter Two, and will be more concretely introduced later in this chapter.

Although our indicators of perceptions and attitudes toward good teaching are not identical with the indicators of the actual teaching behaviors, they emerge from the same theoretical perspective. Hence, we will explore whether or not sex differences are consistent across the two sets of data.

Theoretically, we do not postulate that sex differences in adherence to the good teaching model will be great. This is so because both males and females are socialized into an academic culture which holds the model of good teaching. Consequently, males and females could feel equal pressure to conform to it. However, we hypothesized that women, because of their presumed greater status-anxiety, may feel more pressure to conform to the model and may invest more in their teaching (cf. Atin, 1963). We hypothesized that women may not engage in more structuring of material, given men's strong tendency to do so, but may conform more closely to participatory teaching norms. Although sex differences are not likely to be great, we expected women to emphasize the importance of teaching more than men, to invest more effort in implementing the participatory teaching model, and to receive stronger sanctions from students (lower student evaluations) when they do not.

We turn now to the interview material. Following that analysis, we will look at the observation data, noting consistent sex differences in attitudes and behaviors. Finally, we will see if these behaviors are related to student evaluations of teaching.

PROFESSORS PERCEPTIONS OF "GOOD TEACHING"

Emerging from our interview materials are three clusters of ideas relevant to the question of "good teaching." The first we refer to as "salience of teaching role," the second, the importance of structuring material, and the use of the participatory model of teaching, and third, the classroom focus: the professor or student. We expected the teaching role to be more salient for women; we also expected women to be more committed to the participatory teaching model and to students as the focus of the classroom.

Saliency of Teaching Role

Commitment to teaching may vary between professors. For some, teaching may be a highly salient role; for others it may be virtually a ritual, a perfunctory role. Being highly committed may not mean one is an excellent teacher, nor is the reverse necessarily true. But, differences in the saliency of the role by sex may affect the amounts and kinds of satisfactions males and females derive from teaching, as well as their propensity to conform to the ideals of "good teaching."

Our respondents discussed four issues which we have used as indicators of the "salience of the teaching role." These were (1) affective attitude toward teaching, (2) importance of being an excellent teacher, (3) amount of time spent discussing teaching, and (4) amount of time spent preparing for class. Each respondent was assigned a score from 4 (high) to 0 (low) on each of the indicators and these indicators were summed into a single scale with a range of 16--"Dedicated" to 0--"Not-Invested" in teaching. In addition, respondents volunteered information concerning the amount of "life-involvement" they had in teaching, e.g., the relevance of that activity to their general state of well being and to the management of their other role-responsibilities. Each of the researchers responsible for the interviews independently rated from 0 (low) to 4 (high) each of the respondent's "life-involvement" in teaching. The coders agreed on all but two judgments, and those were negotiated. Life-involvement judgment scores stand as secondary or confirmatory data for the saliency of teaching scores, since there was considerable agreement between the two.

Tables 4-A-1 and 4-A-2 about here

Table 4-A-1 presents the mean salience of teaching scores and the mean life-involvement scores by rank, sex, and orientation. Table 4-A-2 gives those scores by male-domination/non-male-domination of department. (We do not present here the specific scores of individual faculty in order to preserve confidentiality.) As the tables reveal, there are no overall sex-differences, although there are some differences in relationship to male-domination/non-male-domination of department. Teaching is more salient for those in male-dominated departments than for those not so situated. Inspection by department, however, revealed that these differences are primarily accounted for by one non-male-dominated department. Professors in that department commented that not only was "good teaching" not rewarded (in terms of salary, promotions, professional leaves, etc.), but that it was negatively sanctioned. ("There was punishment for teaching well." "I was told if I wanted to get tenure, I had to stop teaching so well because the other faculty were jealous.")

Most interesting, however, are the interactions between sex and rank in the saliency of teaching scores. Specifically, commitment decreases as rank increases; male and female professors tend to be equally dedicated, with assistants being the most dedicated and full professors the least. The main sex difference occurs at the associate level, where women are more dedicated than the men; they are closer to the assistant professors in their degree of dedication whereas male associates have mid-way saliency of teaching scores.

Finding no sex differences in overall saliency of teaching, we conjectured that teaching, nevertheless, might be salient for men and women for different reasons. To explore this possibility, we constructed separate composites of the male and female dedicated teachers based on the interview materials. These composites--the male ideal-typic dedicated teacher and the female ideal-typic dedicated teacher--do not represent any particular professor but a blending of those characteristics found among the dedicated teachers.

The male ideal-typic dedicated professor sees teaching as "the most exciting, stimulating, varied profession that exists." He "loves it." He wants to do well at it. He spends nearly all his time preparing, seeing students, and talking about teaching to his colleagues. A major portion of his preparation time, and a major subject of his conversations are devoted to "the mechanics of teaching," "designing teaching techniques," and sending memos to his colleagues about his ideas. Transferring content is not enough, "you must find a way to get the material into their heads." Teaching is a calling, a "mission much broader than the subject matter." Part of that mission is to find ways to teach his colleagues to teach better, to recognize students as human beings, and to devise techniques that work. When the techniques are successful, the professor feels good. When they flop, he designs new ones. He orders the remainder of his life around his teaching. This may mean that his wife "chooses" not to work, or she helps him with his curriculum planning and course presentation, or that he sacrifices being an "ideal husband/father," or that in order to have any time to himself he "has to get out of town."

The female dedicated professor, as an ideal type, sees teaching as extremely valuable and important, perhaps "her most important professional contribution," "the thing she does which has the greatest value," She is "highly devoted" and "ego-involved." She "loves it." She spends a considerable amount of time preparing, thinking about it, counselling students, and talking about her teaching, especially with colleagues who are friends. For her, teaching means "communicating the subject matter and working with the students." Both are equally important. ("I get to read books I'm really interested in and talk about them with others (students).") Students' responses are extremely important to her as she sees students as valid judges of her excellence. She craves feedback, including negative feedback, so she can improve. If her class goes well, she shares her elation with colleague-friends; if it goes badly, "if the students become disenchanted--for whatever reason--everything else in (her) life feels out of whack;" doing a poor job makes her feel "depressed for hours--even into the evening." She knows she is a role-model for her students, especially her female students, and strives to find ways to encourage them to succeed and at the same time to differentiate themselves from her--to find their own paths toward success.

The ideal-typic dedicated male professor and the ideal-typic dedicated female professor, then, are similar in some ways. They both love teaching, want to be excellent at it, and expend a considerable amount of time preparing for it and talking about it. And, both have high life involvement with it. However, males tend to take a more instrumental orientation toward their teaching, and females a more expressive one. This is seen in several ways. First, males discuss their teaching dedication in terms of techniques and methods of teaching, whereas females focus on the content and the students. Second, males talk to colleagues about those methods, whereas females tend to talk to colleague-friends about their feelings concerning a particular class or student. Third, male professors feel badly when a technique flops, and they rectify it by devising a different method. A bad teaching experience can be "turned around" by a new technique. On the other hand, female professors report feeling very badly and depressed when their classes go poorly. Rectification comes from getting student input and evaluations. Fourth, dedicated males view teaching as a calling, a "mission." Their job is not only to teach students to enjoy learning--an abstracted mission--but to teach the other teachers--an externalized one. Female professors do not report the same messianic zeal, but rather view themselves as individual role-models who have a responsibility to create a more personalistic and individualistic relationship to their students.

Thus, dedicated teaching seems to have different meanings for men and women; the impact of "dedicated teaching" on their lives is different--both emotionally and structurally. Males tend to view the role as a "career" or a "cause" and structure their private lives accordingly; wives and children accommodate to the demands that "dedicated teaching" requires. Female dedicated teachers, apparently, do not expect the lives of their families to accommodate to the time-demands that flow from their dedication. However, unlike the males, they frequently mention the personal consequences dedicated teaching has for them in terms of their emotional state, their feeling of well-being or depression. Dedicated males either do not experience these emotional consequences or erase them quickly through re-focusing on teaching as a technical problem. Females focus on the relationships they develop with the students; males are more concerned with their ability at executing a technique. In part, women are more concerned with interactions with students, a precursor to use of the participatory teaching model. Thus, while teaching itself may not be much more important for women, use of the participatory model may be.

Almost directly opposite to these dedicated teachers are male and female professors--mostly at the full rank--who can be described as "non-invested" in teaching, not devoted or dedicated or involved. To what extent do male and female professors experience that non-involvement in similar or dissimilar ways? To address this question, we have, again, constructed ideal-typic portraits of the male non-invested professor and the female non-invested professor.

The male non-invested professor sees teaching as "at best ancillary to the role of scholar/researcher," and at worst, "the temptation of the devil," a waste of his talent and energy. Excellence in teaching is not a "priority" or a "primary motivation." Little time is given to preparing for class, but he brings to it his "years of reading." Only occasionally does he discuss his teaching, and then with friends or spouse. Students have to motivate themselves, and "spending time with such unformed and uninformed minds" is deadly to one's own development and growth.

The ideal typic female non-invested professor views teaching as at best "what I do for a living," and at worst, "a chore, an interruption." Excellence in teaching is not important, and in any case, "teaching takes up too much time." She rarely talks about it, and then primarily to a friend or spouse. Preparation time is minimal, but her "whole intellectual life is preparation." Students feelings are not very interesting, their ideas not very stimulating, and their evaluations not very important. They are not her "constituency;" they are not the persons whose approval she seeks. Role-model pressures are felt, but she believes it is her own life and she can act in ways she--not they--judge appropriate.

As is clear from these two ideal-typic constructions, these men and women sound very similar; indeed, occasionally the language is nearly identical. Non-invested professors spend a minimal amount of time preparing for and talking about teaching, have low ego-involvement in being excellent, and do not hold teaching as a priority. They have other interests. In the accounts of the male professors, the other interests are clearly specified as research/scholarship. That specification is not found in the women's accounts. We might view this as a continuation of the male career investment mode that was noted among the male dedicated teachers. That is, the male non-invested professors, although not concerned with teaching, make it abundantly clear that they are invested in other aspects of the professorial role--scholarship/research/writing. The female professors leave open what their other commitments and interests are. Further, although it is clear that teaching has lost its emotional saliency for women, there is no sense from the interviews that other aspects of their role have captured their emotional investment. Consequently, we might hypothesize that as females move through the ranks, they become more like the males--in the sense of dropping the expressive dimension, but that they are less likely to adopt the "career" and "mission" alternative.

In summary, then, male and female professors are equally dedicated or not dedicated to teaching, and there is an association between sex and rank. Dedication decreases as rank increases, with dedication decreasing more rapidly for males than for females. By looking at the ideal-typic male and female dedicated teachers, however, we find that the meanings of that dedication are quite different by sex. Dedicated male professors are more instrumental in their orientation, whereas dedicated female professors are more expressive. Finally, the meaning of the teaching role for the non-invested professors is quite similar for both sexes; these males and females both lack an expressive orientation toward teaching.

Commitment to Structuring of Presentation

The interviews also contain information about specific teaching strategies used. First, we consider indicators of commitment to structuring presentations, then the use of the participatory model. An important feature of "good teaching" is the structure and clarity of the material presented to the students. This involves, in part, the notion that teachers should plan the progression of ideas and have an "agenda" in mind for each classroom session. In the interviews professors varied widely in the degree of structure they claimed characterized their teaching styles. We discuss the three primary types: tight structure, loose structure, and "deceptive" structure. As expected, the use of these structures was not associated with sex, nor was it associated with rank, disciplinary orientation or sex-ratio of department.

Some of the professors described a style which involved careful preparation and tight organization. For example, one male associate professor in the Humanities explained: "You lecture as clearly and in as organized a fashion as you can." A woman full professor in Home Economics noted, "I outline usually or go with transparencies, but I get them organized. I don't like to be in a class myself where the teacher is fumbling around."

Other professors described a looser style which involved less preparation and granted more organizational responsibility to students.

> "I make a practice of not reading (assignments) that are going to be discussed in class ahead of time so I don't have preconceptions about them. Somebody in the class is going to be a critiquer so they read it aloud and start talking about it." (Humanities)

A woman associate professor in Home Economics gave the following example: "I have a plan in mind but if students bring up some relevant subject matter we'll go with it because that's where they are. That's the teachable moment. That's the time to make use of that."

Third, other professors reported a style which was essentially a mixture of the two preceeding ones. This style was described as one in which professors maintained an organized presentation of ideas while making it appear as if students actually controlled the classroom. That is, professors were able to orchestrate students' spontaneous presentation of ideas and insights to conform to the teacher's plan for effectively presenting information; the class appeared deceptively loose. Two examples, one from a male and one from a female professor, are presented below:

> "It's an easy, free-going class, though all the time I'm pulling the strings underneath. Someone describing me would say: 'He's apparently very easy-going, deceptively loose, but underneath there's a very tight structure." (Male--Assistant--Humanities)
>
> "There really is structure. I have in mind things that ought to be covered in a session but I let the students move in agendas of their own but try to get us back to what the agenda really is." (Female--Full--Social Sciences)

Although there were no sex differences in the faculty's reported use of any one of the three types of styles, there was an interesting difference in student reactions according to accounts of the professors. Women who described their style as loose and unstructured were more likely to report hostile reactions from students. As one woman assistant professor in Home Economics noted, "Some get very upset if there is not a lot of structure." Several women felt that students see a looser teaching style when used by a woman as indicative of low competency. As one associate professor in the Humanities explained:

> "They think that I am too disorganized. I give the impression of not having things laid out in rigid structures. A lot of our students want coverage...I'm not a coverage person."

In summary then, the professors reported teaching styles that varied widely with regard to the degree of structure involved. Three orientations toward planning and organizing were evident in these descriptions. While men were as likely as women to describe each of the styles, women were more likely than men to report student resentment of looser, less-structured approaches. However, our student evaluation data (discussed below) indicate that this is not so; none of our indicators of structuring had an effect on the competency ratings of men *or* women professors. It could be, though, that our indicators were not measuring precisely the same phenomena described by these professors. At any rate, the interview data suggest that women's attempts to soften their presentations by loosening up the class structure are perceived by the women as creating negative student reactions.

Commitment to the Participatory Model of Good Teaching

We assessed commitment to the participatory model of good teaching in two ways First, we considered humor to be an indicator of easy interaction with students, and examined differences in the use of humor. Then we examined four direct indicators of commitment to the participatory model in order to develop a scale of commitment to the participatory mode.

Humor. One indicator of adherence to the participatory model of good teaching rests in professors' attempts to create warm and "pleasant" atmospheres, such as through the use of humor. Although we found no sex differences in the use of humor as part of "good teaching," there were sex differences in the reasons men and women gave for use of humor. As before, these sex differences seemed to interact with rank.

Male professors, especially assistants, used humor to "relax the class," to encourage student participation. Humor, according to their accounts, helped informalize the class as exemplified by the following statement by an assistant natural scientist:

> "I'm lewd. I use semi-lewd humor because some of the things in the course relate to touchy sorts of things that need just a little humor to break the ice."

Men also used humor as "entertainment;" to enliven their classes. They reported feeling good when their "jokes" were well-received.

Female assistant professors rarely report using humor purposefully in their classrooms but tenured women frequently report using it. Sometimes they used humor to deflect situations which were potentially a challenge to their authority, as the following two quotes illustrate:

> "One man raised his hand and said, 'How can you be a liberated woman? You're wearing a bra.' I have a tendency to ridicule back and my tongue is sharper than theirs...I just out-snide them in class." (Full--Social Sciences)
>
> "If they make a snide comment I try to keep it in a joking basis." (Associate--Humanities)

The tenured women, also, used humor as entertainment like the men did. As one stated; "I use a lot of humor and funny illustrations...I put on a show." And some saw it as an essential ingredient of "good teaching" as witnessed by the following excerpt: "I don't think I've done a good job of teaching if we haven't laughed during a class period."

Thus, untenured males and tenured females are likely to claim humor as a strategy for "good teaching." "Entertainment" is used by male assistants and tenured women to create a friendlier and more pleasant atmosphere. However, male assistants are also likely to use it to "take the edge off" and enhance student participation whereas tenured women use it to control inappropriate student participation. Given the options potentially available to women in situations where a student is "obnoxious" and "out of line" (such as directly confronting him/her, removing him/her from the classroom), the fact that they use humor suggests they are trying to handle the situation in a way which minimally disrupts the "open," "non-threatening," "warm and personal" classroom environments they try to create.

Participatory model scale. To assess the preference for the participatory teaching model, we use four kinds of information from the interviews: (1) stated use of an interactive class format, (2) desire for student input in class, (3) desire for student input in the form of student evaluations, and (4) the professor's attitude toward student opinions. A single measure, commitment to the participatory model, was formed by assigning each interviewed professor a score of 0 (low) to 4 (high) on each indicator and summing the scores for all four indicators. Hence, this measure, ranging from 0 to 16, reflects the professor's claimed commitment to the participatory model.

Nearly all the faculty claimed they used an "interactive" classroom format--lecture-discussion, question periods, etc. Even the faculty in the natural sciences, where it is sometimes claimed that the "interactive format" is inappropriate, stated their preference for this model.

Table 4-A gives the mean participatory model scores by sex and rank, and Table 4-A-2 the scores by sex-ratio of department. Note first the almost universal stated adherence among our respondents. There are no overall sex, disciplinary orientation, or sex-ratio differences. Sex and rank, however, do interact. The lower the rank, the greater the claimed adherence to the model. As with the saliency of teaching scores, female associates are closer in claimed adherence to assistants (both male and female) whereas male associates are closer in claimed adherence to full professors (both male and females).

Although male and female assistants score similarly, as do male and female fulls, we wanted to know whether or not the meaning of participatory education is the same for both sexes. That is, do they have the same reasons for adhering to it? To answer this we draw upon the interview material of faculty who claim strong adherence to the model, and of those who claim little adherence and construct ideal typic portraits of male and female adherents and non-adherents.

The male professors who are strongly committed to the participatory model discuss student input as necessary and valuable because "we need to find what the students want to learn and what they expect" so we can "then do it." "Students won't learn unless motivated and interested." Further, because it is difficult to get students to discuss, sometimes it is necessary to "throw away a period just to get them talking...and chattering about the material." Most of the interaction, however, is between student and professor.

The female professors who are committed to the participatory model, on the other hand, discuss student input as desirable and valuable primarily because "through the interchange they (the students) develop a commitment to ideas;" "the process of learning is the learning." Eliciting discussion is not difficult because the professor creates a classroom atmosphere that is warm, relaxed, open, and non-threatening. Best of all is the interaction that occurs between student and student, seeing them "relate to each other, listen to each other."

Male professors who are strongly committed to the participatory model, then, see the interactive process as potentially a "time waste," difficult to sustain, primarily as relation between professor and student, and valuable to the extent that they can find out what the students want to learn so they can teach it. On the other hand, female professors view the interaction as valuable in and of itself, and they create non-threatening classroom atmospheres in which students can exchange ideas with each other. Obviously, these are very different attitudes toward the value of participatory education (differences which are discussed in greater detail in Chapter Six).

In contrast to strong adherents to the participatory model, males who are not strongly committed to the participatory model view student input "as not a very useful thing," since "not everybody's opinion is equally good." They do "not even try to talk to the students" about their preferences and opinions regarding their education. Students are not able to evaluate since they lack basic competence.

Females who are not committed to the participatory model view student evaluations as primarily judgments about the professor's personality rather than her competence. Students are not "particularly thoughtful" in those evaluations. "I know whether I'm prompt, prepared or organized." They may not "even bother to read" their evaluations. They encourage classroom interaction and will "let students move in agendas of their own" or encourage questions to the professor, and they will try not "to talk down."

Male and female non-adherents, consequently, are fairly similar in their lack of respect for student evaluations. They differ in terms of their classroom interaction patterns. Males tend to down-play such interaction almost entirely, whereas females have adopted the model of student-interacting with professor (rather than with other students) that was prevalent among the men who strongly adhered to the participatory model.

Locus of Learning: Professor or Student

Our analyses of the meanings of participatory education and dedicated teaching for males and females both led to an interesting conclusion; men and women professors seem to have very different attitudes toward students. Women professors, especially those who are dedicated to teaching and the participatory model, value student contribution as an end in itself: for them, it is not simply a pedagogical technique to stimulate student interest and motivation. Dedicated female teachers see students as valuable sources of learning. Student participation is a source of stimulation and learning for these women; affective relationships formed with students are also an important part of teaching. Even the women professors who do not adhere to the participatory model encourage classroom interaction, albeit between student and professor.

Male professors do not mention the value of students as contributors, as collaborators, as sources of knowledge or stimulation. Nor do they mention the importance of relationships they form with students. Rather, they see themselves as the center of the classroom, as the source of knowledge. Male dedicated teachers talk about the methods they might devise to better convey the material; male adherents to the participatory model talk about the necessity of "permitting" student participation in order to motivate the students or find out what they know, what they want to learn. Students are not seen as having any real, active part in the learning process.

This stance toward the students we have termed "locus of learning." Male professors tend to see this locus as being entirely with themselves, while female professors tend to see it as being at least partially with the students. The sex difference is seen most clearly in faculty assessments of "good" and "bad" classroom experiences.

Professors were asked to describe a particular classroom experience they felt was especially positive or rewarding, and a classroom experience they found especially negative or disappointing. Almost without exception, professors' descriptions of best classes emphasized a high degree of student involvement in the learning process (related to the blanket endorsement of the participatory model discussed above). This involvement was generated in a variety of situations including interaction between students, interaction between a student and the professor with the rest of the class as audience, and during a professor's lecture when students listened attentively. For example, some professors described student involvement in the context of a class discussion in which students became excited and "caught-up" in relating their ideas and opinions ("Everybody was sort of leaping in saying things and getting involved and enthusiastic." (Female--Assistant). In other cases involvement occurred when some or all of the students were able to relate what they were learning to their personal lives ("We talked about heart attacks and one student was crying because her father died of a heart attack so it was a very emotional experience and the class all liked it" (Male--Assistant). In still other descriptions, involvement was fostered through simultaneous, but independent, intellectual discovery in which students seemed to suddenly gain insight during a lecture ("It was one of those moments where the whole lecture section suddenly wakes up and you see that there is some comprehension" (Male--Associate).

In this sense, the two sexes were highly similar, however, men and women differed in one important way. Women were more likely to describe situations as being most rewarding which involved students increasing their independence from the professor, taking charge of the progression of ideas, pursuing topics outside the course requirements, or anticipating professors' major points. The following provides some examples:

> "(It happens) when a class starts to take over and I find that they're generating their own ideas and getting to the questions that I wanted to ask before I have to ask them. So that they move the discussion along." (Humanities)

> "I'd gotten to the statement of the theory near the end of the class but I didn't have enough time to put the argument together. The next time we got back together they had constructed the argument. They were able to see exactly how this all fits together. That was exciting." (Natural Sciences)
>
> "I could see them talking to each other, sharing ideas, relating to each other. They were not talking to me, they talked to me as if I was anyone else, a member of the class." (Social Sciences)

On the other hand, men were more likely to describe best classes as situations in which they, as professors, had played a crucial part in generating student involvement. In these descriptions, what made the class "best" was not only the fact that students became very involved in learning but also that the men felt a sense of satisfaction for being able to foster this classroom atmosphere. The following presents some descriptions:

> "It was occasions when everyone would be talking, everyone would be well read. It's like I motivated them to some extent. There was a good exchange of ideas based on the material presented so that when I walked in that room it was like I turned them on in some way or another." (Female-Dominated)
>
> "I had, in fact, covered the material well, conveyed the important facts and yet, in a sense, I entertained them and kept them interested in it. I had a little story to tell and it went over well and contributed to the atmosphere in the classroom." (Social Sciences)
>
> "There was a lecture I gave on the counter culture of the 60's that really struck home since I was a graduate student then and I used a lot of my own experiences. It really seemed to get things across to students...to the extent that they got up and applauded at the end of the lecture." (Humanities)

The professors' descriptions of their worst classes showed the same sex difference in perceptions of locus of learning. For women, the worst classes were those in which students' contribution to the classroom was lacking in some way ("They were completely disinterested;" "They had all been assigned to read a book and nobody had read it;" "I think the students were just all bad"). For the men, however, descriptions of worst class experiences tended to focus on the deficiencies of the teacher ("I skipped some material and had to go back and got confused;" "The most embarrassing ones are where you go in and actually get lost in your own explanation;" "When I use teaching techniques that just flop terribly").

In sum, this constitutes fairly strong evidence for sex differences in locus of learning. Males and females take different stances toward the students and have different perceptions of the student's role and competency in the classroom. Women professors tend to see students as more valuable contributors, a more integral part of the learning process. Given this difference, we might better predict sex differences in the ordering and participatory behaviors observed in our larger sample of professors.

CLASSROOM "GOOD TEACHING" BEHAVIORS

Male and female professors are similar in their claimed adherence to good teaching, although they differ in the meanings good teaching has in their lives, their ideas of what actually constitutes participatory education, and their stance towards students' roles in the learning process. Females tend to be more student-centered than males. However, we do not know, at this point, if these different meaning-structures have consequences for how they actually teach. To find out what those teaching behaviors actually are, and whether there are sex-differences in those behaviors, we turn to our classroom observational data.

We expected women to engage in more "good teaching" behaviors, due to their heightened status anxiety and probable hesitancy to deviate from the good teaching model. Sex differences might be greater for certain of these behaviors, however. Given the higher value women place on student input, emotional responses, and teacher/student relationships discussed earlier, greater sex differences might well appear in interactive behaviors, especially those which permit or encourage more student input.

Table 4-B about here

Mean sex differences in these behaviors are examined in Table 4-B. We consider sex differences for those in male-dominated and non-male-dominated departments separately in order to see the impact of sex-ratio on sex differences. Figures 4-A to 4-E show the distributions for some of these behaviors for the four groups of professors. (See Appendix B.) Tables 4-C, 4-D, and 4-E use a regression format to estimate the independent effects of sex and male-domination of department on selected "good teaching" behaviors, controlling for other possibly confounding factors. This regression format also allows us to test for the significance of sex by male-domination interactions that appear in Table 4-B. Results from this interaction analysis in regression format are not presented below since most of the interaction terms were not significant. Occasionally, these results are mentioned, however.

Structuring of presentation. Looking at the means for structuring of presentation variables (see Table 4-B), there are not many differences. The most striking one is the relative non-use of lecturing (presenting material) by the women in non-male-dominated departments. (We return to this below.) Men in non-male-dominated departments are more likely to give ordering statements and both groups of men are more likely to give unspoken presentations. Both men and women in male-dominated departments correct themselves more often. Within each sex-ratio category, women tend to use, in total, more managerial

Page 84 is blank

behaviors than their male counterparts. However, none of these differences were statistically significant (see Table 4-C) when class-size, course level, and rank are controlled.

Table 4-C about here

These results concur with our interview materials. No great sex differences were discovered regarding the professors' accounts of their structuring activities. And both sets of findings do support our theoretical expectations--women are no more likely than men to structure their presentations.

Adherence to the participatory model. We next consider differences in adherence to the participatory model. The reader will recall that the interview material showed no overall sex differences in the claimed commitment to this model, although there were patterned differences in what the faculty meant by participation. Males tended to mean by participation, limited participation, whereas women meant the students were active partners in the learning experience. The findings from the observational data are consistent with these results.

Although we have conceptualized "lecturing" as an indicator of structuring of presentation, differences in the proportion of time a professor spends presenting information can be interpreted as a negative indicator of such adherence; the more classroom time professors use in presenting their own information, the less time available for student participation. Differences in this behavior (Table 4-B) are in the expected direction; women in non-male-dominated departments engage in much less of this behavior. (Coding difficulties may have reduced the actual impact of this difference; see Chapter 2 for a full explanation.) Figure 4-B gives the distributions of this behavior, showing that these mean differences are not the result of several unusual cases. However, as mentioned earlier, the regression results in Table 4-C show that this difference is not statistically significant when class size, course level, and the professor's rank have been controlled. Only class size has a significant effect, with larger classes receiving more straight lecture presentation.

When we look at the behaviors which are direct indicators of adherence to the participatory model, we do find some interesting and significant sex differences in behavior, especially in the strong adherence variables, or those behaviors which involve students more fully in the learning process. Differences in the minimal adherence variables were smaller, appeared less consistently, and were sometimes in the opposite direction.

Looking at Table 4-A, second panel, we see that men spend more class time than women responding to students' questions and soliciting clarification ("What exactly do you mean by...?") from the students. Figure 4-C, which gives the distributions of responses to student questions, illustrates the form of this sex difference. All of the distributions are skewed markedly to the left, though less so for the men. Perhaps this structured type of interaction is the major type of professor/student interaction in male professors' classrooms. Although the regression analysis (Table 4-D) indicates that this sex difference is not statistically significant, the direction is consistent with the interview material. Men are more likely to be the locus of learning in their classrooms, to view themselves as the "givers" of knowledge.

Table 4-D about here

Contrast this finding with women's statistically more significant propensity to ask if students have any questions (See Table 4-D). Figure 4-D gives the distribution for this behavior. Although women in male-dominated departments use this strategy less often than women in non-male-dominated departments, they use it substantially more often than the men in their departments. Of the three minimal adherence variables, checking if students have questions is the strategy which is the most student-centered. Consequently, these results are consistent with our interview materials.

Larger sex differences occurred in classroom behaviors indicating strong adherence to the participatory model. Women in male-dominated departments often engaged in more of these behaviors than women in non-male-dominated departments (Table 4-A, third panel), although the (unreported) sex by sex-ratio interaction terms were not significant. That is, sex and sex-ratio had additive effects.

When the mean differences are inspected, we find that women more frequently use those techniques which are the most student-centered, e.g., students--as contrasted to the professor--involved in experimental activities; students--as contrasted to the professor--engaged in laughter, students and professor paused for thought and so on. Indeed, the total mean differences in student input in male and female classes are substantial. (See Table 4-A, panel three).

Professor engaged in thought and soliciting student input, students' total input and students' manipulation of artifacts, however, were the only statistically significant differences. These behaviors were more likely to occur in women's classes, and they are clearly behaviors which are student-centered.

Male-domination of department affects some behaviors significantly, namely, the professor's use of experiential methods, the professor laughing, and thinking. Faculty in non-male-dominated departments are more likely to use the first two techniques, and their colleagues in male-dominated departments the third one. (See Table 4-E). However, when we re-inspect the mean differences in professor's experiential presentations (Table 4-B), we see that this effect of male-domination is caused primarily by the total lack of such behavior among the men in non-male-dominated departments. The women in these departments use more experimental presentations than the men or women

Table 4-E about here

in the non-male-dominated departments. The male-domination effect for professor thinking is primarily accounted for by the high frequency of that behavior among women in male-dominated departments. Thus, important sex differences partially account for most of these sex-ratio differences. Although professor laughing is not common, professors in non-male-dominated departments laugh more; and men in each category laugh more than their female counterparts.

In summary, then, when we view all the participatory model behaviors, we find there is a remarkable similarity between male and female professors. The major portion of classtime is used by the professor to present information with a fair amount of interaction with students interspersed. This generalization is consistent with our interview material. When we look more closely at specific behavioral indicators of adherence to the participatory model, however, we find a sex-difference; and that sex-difference is also found in the interview material.

Women, according to the interviews, are more likely to view their students as active, important contributors to the class. Our observational material agrees with this; of the various behaviors examined, women--regardless of the sex-ratio of their departments--are more likely to use techniques which increase the total amount of student input into the classroom, and to use those which are the most student--rather than professor--centered. Although both males and females adhere to "good-teaching," and have overall similarities, women's classes are typically different than men's classes in that students participate more, and this participation is more independent.

Effect of Rank

Given our hypothesis that sex differences may exist in these behaviors because of women's heightened status anxiety, we might expect to find sex differences largely among assistant professors for whom status anxiety might be most extreme. Hence, we re-estimated the regression equations in Table 4-G adding a term allowing for interaction between sex and rank, where rank was a dummy variable coded 1 for assistant, 0 otherwise. We found only two significant interactions using this procedure, namely, presentation of information and soliciting student input. In both instances, the pattern was the opposite of that expected; sex differences were greater (and significant) for professors at ranks higher than assistant. Assistant men and women both made great use of the participatory model, while tenured men were less likely to do so. Based on the results from the interview data, this sex difference among tenured professors may be largely due to differences between associate professors (the bulk of our tenured women). Women full professors may become more similar to men full professors in their divestiture from the teaching role, a possibility we cannot test with this sophisticated technique because there are not enough women full professors in the sample. Tabular analysis however, consistent with the interviews, indicates that women full professors do reduce their adherence to the good teaching model.

GOOD TEACHING AND STUDENT EVALUATIONS

Having shown which of these good teaching behaviors were more typical of one sex or another, we are now concerned with their impact on student evaluations. In Chapter One we argued that students may sanction professors who deviate from sex-appropriate teaching styles and reward professors who do not. Student evaluations serve as a kind of barometer for the feedback students give professors throughout the term. Recall that we have measured two types of student evaluations: competency and likeability of the professor. Both types of teaching evaluations may be affected by good teaching behaviors, though competency evaluations would seem more relevant. We have predicted that women will be more severely sanctioned for deviating from the good teaching model than men. Students' competency ratings of women professors may be especially affected since their competency may not be as taken for granted as men's. Indeed, several professors mentioned this in the interviews. Hence, women who do not engage in the familiar good teaching behaviors may be especially likely to be judged less competent by the students.

To test this idea, we look first at zero-order correlations between good teaching behaviors and the student evaluation scales (Table 4-F). We then look at regression equations predicting student evaluations with selected subsets of good teaching behaviors, controlling for class size, the proportion of the class which is female, and whether the department is male-dominated, giving us the direct effects of certain good teaching behaviors independent of other possibly confounding influences. It also gives us some idea of the total impact of sets of these good teaching behaviors.

The zero-order correlations between these behaviors and student evaluations (Table 4-F) shows that few of these behaviors have any impact on student evaluations. (The same was true when looking at their correlations with the individual items that comprise the evaluation scales.) There was some tendency for women's evaluations, especially those for women in male-dominated departments, to be more affected by these behaviors, though the effects are sometimes in the opposite direction of that expected.

Table 4-F about here

Women in male-dominated departments who solicit more student input and give more experiential presentations receive lower competency ratings. We had thought students would be favorably impressed by these methods; perhaps they see them as wasting time. Or, perhaps, they are considering the way the men in those departments teach as the "right" way, and since these men do not use experimental methods or frequently solicit student input, doing so may be judged "wrong" and, therefore, a reflection on the woman's competence. Women in non-male-dominated departments are judged less competent the more they manipulate artifacts during class time. Perhaps students also see these demonstrations as "marking time." It is ironic that women are negatively sanctioned in these instances for attempting to broaden student participation, a teaching style they are more likely to use.

Some of these teaching strategies improve student evaluations, especially of likeability. Women professors in male-dominated departments who laugh more often in class are liked more and judged to be more competent; women in non-male-dominated departments are better liked the more often students laugh in their classes and the more student questions they receive.

Good teaching behaviors have very little impact on student evaluations of male professors. They have absolutely no impact on men's competency ratings. Men in male-dominated departments are liked better the more they solicit clarification from students, while men in non-male-dominated departments are liked better the more they solicit general student input. These men are also liked less the more they laugh in class. Apparently men professors are judged to be competent regardless of their "good teaching" behaviors in the classroom, though they can improve their affective relationship with their students by encouraging more student participation. The use of these strategies does not work so well for women; their competency ratings seem to suffer the more student involvement they encourage. Use of humor, however, makes them more likeable. Hence, the same category of behavior when performed by a male or a female has different consequences for student evaluations.

When other factors are controlled for, these results are slightly modified (see Table 4-G). Women's evaluations are affected by their use of certain behaviors, but men's are not. Specifically, women are better liked the more they ask if students have any questions, the more experimental presentations they give, and the more solicited responses their students give. They are

Table 4-G about here

also judged more competent, the more experimental presentations they give.

Men's evaluations are not affected at all by these teaching strategies, but the structural variables are quite important. Class size (a factor also important for women) has quite a large effect; the larger the class, the lower the students' evaluations of professors' competency and likeability. Men are judged to be more competent the higher the proportion of females in their classes, and they are liked better if they are in non-male-dominated departments. Women's evaluations are not affected by these latter two factors.

While these results are somewhat inconsistent with the zero-order correlations, both sets of results show several sex differences in student evaluations. First, although good teaching behaviors generally have very little impact on student evaluations, they do have more impact for women than for men. With structural aspects of the class controlled, women are judged more competent and more likeable the more participatory teaching methods they use. This same benefit does not accrue to men; their evaluations are more strongly affected by structural features (e.g., class size, proportion of females). This suggests that students may have very strong preconceived notions of men professors which actual classroom interaction is not able to alter. Regardless of what men actually do in the classroom, their evaluations are most strongly affected by structural features. In the interviews, many men complained that their students stereotyped them and that dispelling those stereotypes was a major problem. The following chapter discussed this issue more fully in the context of authority management.

SUMMARY

These results lend some support to our original hypotheses, although some modifications are also suggested. Women professors are more likely than men to use the participatory teaching model, especially in ways that allow for more independent student input. This difference is reflected in the behaviors we observed, as well as in the interview material dealing with attitudes toward students. Women professors view students as active collaborators in the learning process; hence, they give students more latitude in the classroom. These sex differences are especially true of associate professors; men assistants adopt the more female typed participatory model and female full professors divest themselves of this interest.

Student reactions seem to reinforce the sex differences we did find. Students dislike women who do not afford them the opportunity to participate, and show some tendency to judge these women incompetent. Students do not seem to have the same expectations of male professors; they show little tendency to denigrate men who fail to use these methods or to reward men who do.

While these expected sex differences did appear, others did not. Women were not more committed to the teaching role or to the participatory model. Both adopted normative stances typical of those in the "teacher" role, emphasizing the importance of "teaching well" roughly to the same degree. Both were equally concerned with the clarity and structure of their presentations (though we had originally expected this similarity). Both felt student participation was essential for a successful teaching venture. The major difference was in their attitudes toward students which conditioned the extent and quality of student participation they encouraged and received. The tendency for women professors to make fuller use of the participatory model may go beyond the kind of student input considered here; women professors may give students even fuller reign in the classroom, allowing them to contribute substantively to the class. This possibility and others are considered in the context of authority management in the following chapter.

Table 4-A-1

Mean Saliency of Teaching, Life-Involvement and
Adherence to Participatory Model Scores by Rank
(Interview Sample)

	Saliency of Teaching[a]		Life Involvement[b]		Participatory Model[a]	
	Females	Males	Females	Males	Females	Males
Rank						
Assistants	12	12.2	3.2	3	13.2	12.4
Associates	10.8	7.6	3.2	2.4	12	8
Fulls	5.4	4.4	1.4	.8	7.8	7.6
Overall Mean	9.4	8.0	2.6	2.0	11	9.

[a] Range Possible: 0-16
[b] Range Possible: 0-4

Table 4-A-2

Saliency of Teaching and Adherence to Participatory Model Scores
by Male Domination/Non-Domination, Rank and Sex
(Interview Material)

	Saliency of Teaching[a]		Life Involvement[b]		Participatory Model[a]	
	Females	Males	Females	Males	Females	Males
Male-Dominated Departments						
Assistant	13	16	3	4	12	14
Associate	10.5	10	3	3	13	10
Full	4	2.5	0	.5	6.5	6
Overall Mean	9.1	9.5	2	2.5	10.5	10
Non-Male-Dominated Departments						
Assistant	10.3	9.6	3.3	2.3	10	11.3
Associate	10.6	6	3.3	2	10	8
Full	6	7	2.3	1	9.3	8.6
Overall Mean	8.9	7.5	3.0	1.7	9.8	9.3

[a] Range possible: 0-16.

[b] Range possible: 0-4.

Table 4-B

Mean Differences in "Good Teaching" Behaviors by Sex and Male-Domination of Department

	Men--Male-Dominated Dept.		Women--Male-Dominated Dept.		Men--Non-Male-Dominated Dept.		Women--Non-Male-Dominated Dept.	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Structuring of Presentation								
Total Managerial Behaviors	.029	.029	.032	.036	.038	.051	.045	.042
Managerial Manipulation of Artifacts	.002	.004	.003	.006	.001	.004	.002	.006
Managerial Presentation of Information	.025	.025	.028	.035	.034	.049	.038	.039
Managerial Responses to Questions	.002	.008	.002	.003	.003	.009	.005	.009
Managerial Solicitations of Clarification	.001	.001	.000	.001	.000	.001	.002	.003
Professor Manipulating Artifacts	.009	.018	.009	.025	.004	.013	.008	.017
Professor Presenting Material	.702	.188	.765	1.046	.707	.702	.530	.218
Professor Ordering Presentations	.099	.109	.101	.144	.113	.152	.100	.066
Professor Unspoken Presentations	.012	.022	.004	.008	.005	.010	.007	.016
Professor Correcting Self	.003	.004	.002	.002	.001	.002	.001	.002
Minimal Adherence to Participatory Model								
Checking Student Understanding	.015	.011	.024	.040	.021	.016	.025	.017
Professor Responding to Questions	.094	.188	.086	.107	.085	.093	.080	.123
Professor Soliciting Clarification	.009	.011	.011	.013	.017	.020	.014	.014
Strong Adherence to Participatory Model								
Professor Soliciting Student Input	.023	.022	.053	.062	.038	.039	.043	.027
Professor Experiential Presentations	.000	.002	.009	.035	.007	.024	.006	.023
Student Experiential Activities	.004	.027	.009	.035	.004	.013	.010	.032
Student Manipulation of Artifacts	.001	.003	.003	.019	.000	.002	.008	.032
Student Solicited Responses	.031	.037	.050	.086	.045	.041	.053	.044
Student Solicitations of Clarification	.009	.013	.013	.025	.011	.014	.007	.008
Student Solicitations, General	.012	.011	.022	.035	.014	.017	.013	.012
Professor Thought	.002	.005	.008	.033	.001	.003	.002	.004
Student Thought	.005	.008	.008	.020	.005	.009	.006	.011
Professor Laughter	.002	.004	.001	.002	.004	.012	.003	.005
Student Laughter	.009	.015	.017	.046	.013	.018	.011	.017

TABLE 4-C

Regressions Predicting Structuring of Presentation Behaviors

	Teacher Manipulates Artifacts		Teacher Presents Basic Lecture Material		Teacher Ordering Presentations	
	b	Beta	b	Beta	b	Beta
Sex of Professor	-.001	(-.032)	-.022	(-.019)	.001	(.006)
Male-Dominated Department	.003	(.086)	.080	(.068)	-.009	(-.038)
Rank of Professor	-.003	(-.145)*	.034	(.051)	.012	(.089)
Class Size	-.002	(-.072)	.136	(.198)*	.011	(.077)
Course Level	-.001	(-.112)	.018	(.069)	-.000	(-.006)
Constant	.023		.163		.050	
R^2	.039		.043		.013	

	Total Managerial Behaviors		Unspoken Instructions		Teacher Corrects Self	
	b	Beta	b	Beta	b	Beta
Sex of Professor	.007	(.082)	-.004	(-.113)	-.001	(-.114)
Male-Dominated Department	-.008	(-.098)	.003	(.083)	.001	(.142)
Rank of Professor	.002	(.033)	-.001	(-.047)	-.000	(-.091)
Class Size	-.001	(-.028)	-.000	(-.007)	-.000	(-.085)
Course Level	.002	(.110)	-.000	(-.018)	.0001	(.044)
Constant	.028		.011		.003	
R^2	.037		.020		.041	

TABLE 4-D

Regressions Predicting Minimal Adherence to Participatory Model of Good Teaching

	Teacher Responds to Students		Checking Student Understanding	
	b	Beta	b	Beta
Sex of professor	-.014	(-.049)	.008	(.188)*
Male dominated department	.020	(.071)	-.005	(-.110)
Rank of professor	-.016	(-.102)	.003	(.123)*
Class size	.001	(.007)	-.002	(-.080)
Course level	.009	(.146)*	-.001	(-.110)
Constant	.091		.021	
R^2	.029		.060	

TABLE 4-E

Regressions Predicting Strong Adherence to the Participatory Model of Good Teaching

	Teacher Soliciting Student Input (Questions)		Teacher Uses Experiential Methods		Student Experiential Activities	
	b	Beta	b	Beta	b	Beta
Sex of Professor	.018	(.188)*	-.000	(-.009)	.008	(.141)
Male-Dominated Department	-.010	(-.108)	-.006	(-.174)*	-.001	(-.027)
Rank of Professor	.004	(.070)	-.001	(-.044)	.004	(.125)
Class Size	-.008	(-.146)*	.002	(.114)	-.001	(-.044)
Course Level	-.002	(-.117)	.000	(.023)	-.001	(-.116)
Constant	.064		.001		.001	
R^2	.072		.042		.034	

	Student Solicited Responses		Total Student Input		Student Manipulating Artifacts	
	b	Beta	b	Beta	b	Beta
Sex of Professor	.019	(.255)*	.065	(.202)*	.004	(.123)*
Male-Dominated Department	.007	(.099)	.000	(.001)	-.003	(-.071)
Rank of Professor	.007	(.160)*	.019	(.107)	-.0002	(-.009)
Class Size	-.003	(-.067)	-.017	(-.093)	-.002	(-.100)
Course Level	.003	(.164)*	.005	(.070)	-.001	(-.172)*
Constant	.027		.057		.013	
R^2	.100		.056		.051	

	Professor Thought		Professor Laughter		Student Thought	
	b	Beta	b	Beta	b	Beta
Sex of Professor	.005	(.154)*	-.002	(-.095)	.002	(.081)
Male-Dominated Department	.004	(.121)*	-.002	(-.171)*	.002	(.052)
Rank of Professor	.002	(.118)	-.001	(-.093)	-.0002	(-.017)
Class Size	-.0001	(-.003)	-.0002	(-.023)	.001	(.041)
Course Level	-.001	(.078)	.0001	(.048)	.0003	(.049)
Constant	-.009		.062		.005	
R^2	.039		.039		.013	

	Student Laughter		Student Questions	
	b	Beta	b	Beta
Sex of Professor	.006	(.116)	.006	(.093)
Male-Dominated Department	.001	(.013)	.006	(.092)
Rank of Professor	.003	(.108)	.000	(.006)
Class Size	.002	(.056)	-.004	(-.098)
Course Level	.001	(.110)	.002	(.180)*
Constant	-.008		.019	
R^2	.025		.064	

Table 4-F

Zero-Order Correlations Between Good Teaching Behaviors and Student Evaluation Scales

	Men--Male Dominated Dept.		Women--Male Dominated Dept.		Men--Non-Male Dominated Dept.		Women--Non-Male Dominated Dept.	
	Comp.	Like.	Comp.	Like.	Comp.	Like.	Comp.	Like.
Presentation of Material	-.024	-.088	-.064	-.050	-.162	-.198	.036	-.062
Ordering Presentations	-.019	.094	.047	.079	.067	.098	-.191	-.200
Unspoken Presentations	.134	.111	.123	.093	.128	-.238	-.004	-.064
Managerial Behaviors	.140	.174	-.123	.048	.118	.237	-.186	.040
Teacher Manipulating Artifacts	-.045	-.046	.246	.208	-.124	-.200	-.260*	-.190
Teacher Correcting Self	.019	-.008	-.210	.191	.004	.015	.145	.242
Soliciting Clarification from Students	.165	.221*	-.156	-.028	-.038	-.111	.077	-.049
Checking Students' Understanding	-.019	.136	-.007	.076	-.202	-.256	.113	.094
Soliciting Student Input	-.114	-.061	-.345*	-.089	.191	.297*	.087	.207
Experiential Presentation	.074	.089	-.306*	-.145	.189	.133	.028	-.077
Students' Experiential Activities	.095	.095	-.027	.005	.028	.057	.168	.223
Solicited Responses	.100	.078	-.203	-.172	-.181	-.163	.101	.055
Student Questions	.116	.104	.160	.334*	-.061	-.099	.181	.076
Student Manipulating Artifacts	-.022	-.018	.166	-.035	-.147	-.161	-.117	-.110
Teacher Thought	-.051	.032	-.078	.014	-.203	-.195	-.208	-.123
Student Thought	-.010	-.176	-.045	.083	-.094	-.049	-.135	-.116
Teacher Laughter	.070	-.183	.358*	.321*	-.187	-.236*	-.060	.194
Student Laughter	.070	.073	.035	.134	-.149	-.195	.147	.307*

*Coefficients significant at .05 level.

Table 4-G

Regressions of Good Teaching Behaviors on Student Evaluation Scales

	MEN				WOMEN			
	Competency		Likeability		Competency		Likeability	
	b	Beta	b	Beta	b	Beta	b	Beta
Size	-1.254	(-.385)*	-.485	(-.220)*	-1.073	(-.211)*	-.372	(-.197)*
Ordering presentations	.405	(.016)	.683	(.039)	-1.424	(-.041)	-.921	(.071)
Managerial behaviors	1.059	(.128)	5.977	(.107)	-5.812	(-.063)	1.319	(.038)
Unspoken presentations	1.550	(.085)	1.222	(.099)	-1.858	(-.065)	-.984	(-.093)
Manipulation of artifacts	-1.593	(-.079)	-1.679	(-.123)	7.616	(.043)	2.350	(.036)
Proportion female--class	.003	(.207)*	-.001	(-.147)	.075	(.052)	.025	(.048)
Male dominated	.170	(.026)	-.974	(-.216)*	.320	(.043)	-.144	(-.052)
Constant	13.135		6.590		11.614		5.060	
R^2	.206		.141		.049		.058	
Size	-1.297	(-.398)*	-.440	(-.199)*	-1.023	(-.201)*	-.348	(-.184)*
Presentation of material	.263	(.037)	-.149	(-.031)	-.456	(-.088)	-.464	(-.239)
Responding to student questions	-.685	(-.032)	-.006	(-.005)	-3.494	(-.108)	1.099	(-.082)
Soliciting clarification	4.230	(.020)	2.037	(.015)	-2.604	(-.093)	-1.745	(-.168)
Checking student understanding	-2.840	(-.121)	-4.918	(-.031)	2.009	(.160)	1.308	(.280)*
Proportion Female--class	.003	(.189)*	.001	(-.150)	.007	(.050)	.025	(.047)
Male dominated	-.009	(-.013)	-1.072	(-.237)*	.531	(.071)	-.006	(-.020)
Constant	12.024		6.189		11.807		5.137	
R^2	.191		.103		.059		.089	
Size	-1.327	(-.408)*	-.488	(-.221)*	-1.202	(-.236)*	-.416	(-.220)*
Experiential presentations	5.547	(.027)	.772	(.006)	5.046	(.245)*	2.144	(.280)*
Soliciting student input	-6.408	(-.060)	-2.481	(-.034)	1.315	(.016)	1.142	(.037)
Students manipulating artifacts	-11.588	(-.103)	-2.381	(-.031)	1.547	(.011)	-1.937	(-.038)
Student experiential activities	-1.172	(.008)	3.293	(.033)	-14.618	(-.130)	-5.959	(-.142)
Solicited responses	-18.783	(-.066)	-1.326	(-.032)	6.280	(.093)	4.626	(.184)*
Student laughter	15.919	(.079)	-3.510	(-.026)	.542	(.004)	3.991	(.095)
Proportion female--class	.003	(.224)*	-.002	(-.156)	.003	(.017)	-.002	(-.025)
Male dominated	.102	(.015)	1.175	(-.260)*	.444	(.060)	-.253	(-.092)
Constant	12.500		6.022		11.687		4.927	
R^2	.193		.109		.092		.166	

CHAPTER FIVE

SEX DIFFERENCES IN CLASSROOM AUTHORITY MANAGEMENT

Sex differences in classroom authority management are likely to exist because of the role strain and status inconsistency experienced by female professors. Professors are expected to be directive, assertive and knowledgeable, while women are traditionally expected to be warm, nurturant and supportive. Professors are accorded high prestige, based partly on their presumed knowledge, while women are held in low esteem, partly because of their presumed lack of knowledge and competence (McKee, 1959; Pheterson, 1971; Meeker and Weitzel-O'Neill, 1976).

Consequently, women professors enter a position in which they may experience a chain of double-binds. First, since they are likely to be responded to in terms of their lesser status, female, they will not be viewed as legitimate or competent holders of authority. To be viewed as legitimate, however, may require adopting masculine sex-typed styles of interaction, which in turn may lead to resentment and punishment (cf. Kanter, 1977). To attenuate those interactions, they may have to increase their feminine sex-typed behaviors. However, by doing so, they may be judged incompetent (cf. Eskilson and Wiley, 1976; Meeker and Weitzel-O'Neill, 1976), and once again, not legitimately in authority.

Therefore, there are two primary authority management issues which women face. First, the establishment of their legitimacy as an authority, and second, the reduction of their appearance as an authority. In addition, women must establish their authority within certain bounds, being careful not to use male-typed strategies that may cause resentment. These are issues which structurally and situationally, according to the literature, are not conflicts which will be experienced by male professors.

On the other hand, male professors are in a position which is consistent with their status as male. However, that position is within a university with cultural norms regarding what constitutes "good teaching." A part of that culture is that professors should be accessible to students, not be "too authoritarian," and establish a classroom atmosphere in which interaction between student and professor is encouraged. To the extent that a male professor accepts those cultural ideas about teaching, he may find that the authority granted him because of his status, male, may hamper his ability to generate an interactive classroom atmosphere. Consequently, he may experience a conflict between his incorporated cultural norms of "good teaching" and his authority based on his position and sex status, and may, in order to reduce his dissonance develop strategies that reduce his appearance of authority. However, this conflict is fundamentally different from that hypothesized to be experienced by females because it is a qualitatively different experience to operate from a position of legitimated authority--to have the authority to choose to reduce it--than it is to not have that authority in the first place.

Our interview data provide rich and detailed information on (1) how professors viewed their own authority, (2) the kinds of authority management problems they experienced in the classroom, and (3) the strategies they used in handling these management problems. The observational data provide actual measures of (1) student challenges, (2) professors' attempts to reduce their appearance of authority, (3) professors' attempts to increase their appearance of authority, and (4) the harshness of professors' control techniques.

We hypothesized that female professors more than men would experience (1) challenges to their authority, (2) expectations that they devise strategies to establish the legitimacy of their authority and reduce its appearance at the same time, and (3) constraints on the types of authority legitimizing techniques they use. (4) Male professors, however, will recognize their legitimacy as authorities and will be able to choose between strategies varying in authoritativeness. If this is so, then clearly the work conditions of male and female professors are qualitatively different.

PERCEPTIONS OF AUTHORITY AND AUTHORITY MANAGEMENT

We analyzed professors' views of their own authority to discover if males and females had different perceptions of their authority-legitimacy as our theoretical position proposes, and, if so, what consequences these differences might have for the general management of their role as authorities.

Following that analysis, we evaluate the hypothesis that male and female professors display authority differently, by looking at four commonly discussed classroom management problems. The first management problem--inattentiveness--was defined as behavior indicating students' lack of interest, but non-disruptive to the ongoing classroom atmosphere (e.g., falling asleep, reading the newspaper). The second problem--overt disruption--was defined as behavior which disturbed or inhibited the presentation of students' or professors' ideas in class (e.g., talking during a lecture, monopolizing class discussion). The third problem--challenging competency--was defined as verbal statements made by students, in class, attacking the professor's knowledge and expertise. The fourth problem--lack of student participation--was defined as students' unwillingness to interact with the professor in the classroom context (e.g., lack of class discussion, lack of questions or comments). In each area, we determined the amount of management problems a professor experienced, as well as the strategies used to solve them.

In addition to the fact that each management problem was frequently mentioned by professors, these problems were chosen because they represented four different situations in which professors could choose how to exercise their authority. Inattentiveness, for example, could be more easily ignored because it did not bother other students. Thus, professors had more discretion in deciding whether the situation warranted intervention, as well as the nature of the response. With overt disruption professors were compelled to respond, but could vary the harshness of their reprimand. Challenges to competence provided an additional element in that the professor's knowledge and accuracy were publically questioned. Finally, lack of student participation, like inattentiveness, was a non-disruptive problem allowing professors to decide whether, as well as how, to intervene. If, as hypothesized, women are required to establish legitimacy while appearing non-authoritarian, and men may choose between strategies varying in authoritativeness, this pattern should appear in professors' responses to these situations.

Professor's Perception of Own Authority

Before discussing the professors' strategies regarding specific classroom management issues, it will be useful to compare their perceptions of how they are received by students. Sex differences and rank differences are apparent, although disciplinary orientation and sex-ratio differences are not.

Women assistant professors view themselves (probably correctly) as having to convince students that they have credibility. This perception is illustrated by the following statement of a woman in the natural sciences:

> "(I have) that attitude (which) is basically one of establishing myself as an authority figure. I have evolved this view of a professor as a person who is supposed to be really on top of a particular field...and not be whimpy about things..."

That is, it is not taken for granted that the woman is legitimately an authority figure.

In contrast, male assistant professors recognize, as one male Humanities professor commented, "People just automatically assume that a man has more authority immediately;" or, as a male assistant professor in Home Economics stated, "I get from my students that they view men with Ph.D.'s as brighter and more competent than women with Ph.D.'s." Even when team teaching with women of higher rank, he found "I would get all the questions. It's like I was in charge of the class."

At the associate level, the women's perception of the legitimacy of their authority as an undergraduate teacher begins to attenuate. However, for some women, graduate level teaching may continue to pose problems, as this excerpt illustrates:

> "I do think the graduate students themselves expect a kind of authoritativeness that I don't give in the classroom. I don't feel comfortable with it and I think it has to do with my sex." (Humanities)

Once full professorship is attained, however, females no longer express any problem regarding establishing their legitimacy.

Difficulties with establishing legitimacy of authority, apparently, do not arise at any rank for male faculty, as illustrated by the following quotation:

> "I know they (the students) see me as an authority figure." (Associate--Humanities)

In contrast, males repeatedly state that acceptance as authorities has some negative consequences for their "good teaching" behaviors. At the assistant level this is expressed in concerns that the "macho" expectations of students may not be met; that, indeed, the professor may not want to meet them, but that if he does not the students will consider him ineffectual. (This concern parallels the assistant woman's image that a professor is not "whimpy.") At the associate level, the males seem less personally concerned about their "image," clearer about their male-authority impact on the students, and use that authority selectively and purposefully as exemplified by the following:

> "I want to partially maintain that (authority) but I also want to partially break that down so they will look for their own ideas. If I were a woman they wouldn't feel quite that authority." (Associate--Humanities)
>
> "I have to emphasize other roles (father, husband) to eliminate sex-role stereotypes. But, I teach with authority, in a masculine way." (Associate--Social Sciences)

At the full professor rank, either the male no longer cares about the issue, or there emerges what might be described as a "yearning" or a "yen" for student contact. Both a Humanities professor and a Natural Science professor, for example, commented on how they ask students to drop around to "just talk"...and how none do.

Within this general perceptual frame, then, we turn now to classroom management strategies.

Classroom Management Problems

Inattentiveness. One common problem discussed by the professors concerned situations in which students were not paying attention, e.g., reading the newspaper, writing letters, falling asleep. Reactions to this problem varied primarily by rank, although sex differences in response were apparent at some levels. However, disciplinary orientation or sex-ratio of department were not apparently relevant.

Women assistant professors claimed they dealt with inattentiveness from their students by ignoring it or approaching it indirectly. Those who ignored it did so because it did not disturb other students ("I figure that they are coming to college and they are paying for it, so if that's how they want to waste their time..."). An indirect approach was to involve the offending student in a class discussion, such as calling the student's attention and asking for an opinion on the topic. This was not done to "embarrass" the student, but to get him/her interested.

Men assistant professors were likely to say they took a direct approach by reprimanding the student in public or private. Reprimands varied from explaining how inattentiveness would hurt their grade to confronting students with the rudeness of their behavior, as in the following example:

> "If a student is reading the Lantern and not paying attention I will sometimes actually physically take the paper away and either demand an apology from the student or else tell him that attendance is not required, that it is an insult for him to be doing this." (Humanities)

At the associate level, reactions were varied for both men and women professors. Some claimed to ignore inattentiveness--"I care but it doesn't disrupt the lecture"--while others relayed disapproval by making eye contact with the student. Further, at this level women were as likely as men to directly reprimand the student. However, the nature of women's reprimands tended to be less harsh. One woman associate professor explained:

> "I would just stop the student after class and confess to him that it is a bother to me, and that unless there is some overriding reason, I would suggest that if there is no way he can be attentive to the class to not come" (underline ours). (Natural Sciences)

A different tone was apparent in the comments of male associates as illustrated below:

> "I tell them to take a little No-Doze before class. 'Why do you give me your sleepy hours and give the damn bar your awake ones?'" (Humanities)

"They yawn. They read newspapers until you tell them not to. You say: 'You are welcome to read the newspaper but not in my classroom'." (Natural Sciences)

At the full professor level both men and women report little concern over inattentiveness. A few professors noted that they themselves had spent time as students writing letters or reading newspapers in class. But overall, the attitude among the senior faculty was that students, not professors, were responsible for maintaining interest in the classroom.

In summary, then, there are both sex and rank differences in the management of inattentiveness. Female assistants report ignoring the infractions or indirectly solving them by involving the student in the classroom discussion. Male assistants report reprimanding the students. At the associate level, although both males and females claim they reprimand the offending student, the approaches are qualitatively different. Whereas the women will gently correct the student, privately for bothering her, the males are more harsh, direct, and public in their confrontation. At the full professor level, no sex-differences appear since none of the professors viewed inattentiveness as a problem.

Disruptions. The second problem discussed by the professors involved situations in which students disrupted the classroom atmosphere. This involved behavior such as talking with other students during a lecture or side-talking during discussions, and monopolizing class time with constant questions or comments. There was no sex difference in the frequency of reporting this problem.

Talking during a lecture and side-talking was approached directly by all assistant professors. Women were more likely to reprimand the students in an informal, off-handed manner, seemingly designed to reduce their feelings of embarrassment. The following is an example:

> "The first few times I would do it jokingly and I might say it in terms like: 'Shut up,' 'Shut up or get out,' smiling. But if it happens often I might call them up after class and say: 'Hey look, either cut it out or don't come'." (Humanities)

Male assistant professors were more likely to use public embarrassment as a technique to sanction talking. These men discussed how "making a big scene" in class was an effective way to stop the offending behavior as well as preventing future incidents by setting a clear example. Statements such as: "It was very embarrassing for them" or "It was enough social embarrassment to stop it" indicated that these professors felt that embarrassing students was a legitimate way to confirm their authority in the classroom.

At the associate level, professors also reported dealing with the problem by reprimanding students. Women's reprimands stressed that they, as professors, were disturbed by the behavior. One woman explained:

> "I can't stand idle conversation in a large lecture and I have stopped a lecture and explained to them that I must require that they be involved in what we are doing." (Natural Sciences)

Another related an incident in which she required two students to sit apart during classes to prevent further disturbances to her teaching.

The men associate professors' reprimands emphasized that the talking was disruptive to the other students in the class. This involved statements such as: "It's difficult for other people;" "It's causing us a problem if there is a second conversation going on;" and "You are probably disturbing other students." This strategy is interesting, given the finding in the last chapter which showed that men tended to focus on themselves more as the center of the classroom.

At the level of full professor, disruptive talking was dealt with directly and in class by a simple statement asking the student to either "stop or leave."

Absent from these reprimands were justifications for delivering them, e.g., you are bothering me, you are bothering other students. The following are some examples:

> "I told the person in class that if he wants to come to class he shouldn't carry on private conversations." (Male--Humanities)
>
> "(I say) 'If you want to talk to each other go out in the hall and talk. You are welcome to leave any time you want'." (Female--Social Sciences)

In addition, full professors seemed to encounter this problem less frequently than associate and assistant faculty.

Disruptions of the classroom atmosphere, according to the professors, also occurred when one student monopolized teacher/student interaction. As one man explained, "Sometimes you get a student who has to answer every question." (Associate--Social Sciences) All the professors, regardless of sex, rank, discipline or sex-ratio, handled this problem in a similar manner. They would speak privately to the student, asking him or her to save questions or comments for after class. Further, the professors report not being wholly satisfied with their eventual resolution of the problem. The following is a typical example:

> "I had this one guy that myself and the TA's nicknamed 'The Pest.' The problem was that usually his questions did not pertain to what we were dealing with that day or that week or whatever. I don't think I handled it very well because I let him continue with it for about two weeks. And by the end of two weeks whenever he raised his hand the rest of the class just groaned audibly. Finally, I took him aside at the end of two weeks and asked him when he had questions, would he think about them a little more. And if he thought that they were still important questions to

please come in during my office hours." (Male--Associate--Humanities)

In summary, then, handling of disruptions generally differed by rank and sex. Female assistant professors reprimanded students in a friendly, conciliatory way whereas male assistant professors publicly embarrassed the disrupter. The associate woman discusses the disruption with the student as personally problematic for her whereas male associates told the student s/he was bothering the other students. Only at the full professor level is there a convergence: both males and females publicly stop the disrupting student(s) and do not, apparently, soft-pedal or justify their responses to disruptive behavior. However, there were no differences in how professors handled the classroom monopolizer. They discussed the issue with him/her after class after the problem had become habitual and entrenched.

Challenges to competency. The third management problem involved dealing with students who verbally challenged a professor's competency. Responses to this situation revealed some interesting sex and rank-related differences, although no disciplinary or sex-ratio differences emerged.

Challenges were seldom reported by women assistant professors, and the few who mentioned them interpreted them positively. One woman explained, "I guess I'd like to see more of that. To me it says that they are thinking, they are moving, they are questioning" (Home Economics). Another woman stated, "To me, the best thing that could happen in a class would be for them to disagree entirely with me and open the book and try to prove to me that I'm wrong" (Humanities). However, two assistant level women mentioned non-verbal student behaviors that they interpreted as challenges. One explained, "The men in my class, some of them start with very negative attitudes and sit in class with this smug look on their face, very skeptical" (Humanities). Another gave the following example: "Every once in a while you get what I call a 'smirker,' somebody who just sits in the back of the room and has this wide smirking expression on his face. I've had women, but more often men doing this" (Natural Sciences). Both women handled this problem by ignoring it, and in most cases students eventually stopped.

Men at the assistant level more frequently mentioned encountering verbal challenges. Their response was to divert the challenge to another time and place, usually a later discussion in their office. The following is an example:

> "I had one student, very bright, very nice fellow. But he kept attacking me for being anti Soviet. I said, 'OK. That's fair if you want to attack me from that point of view. Why don't you read this? Come in and we'll discuss it and see what happens'."

At the associate level both women and men reported verbal challenges from students. Women tended to handle this in class with a considerable amount of patience, even when they felt the student was clearly wrong. The following presents two examples:

> "I thought that this course would never get off the ground. I dialogued with him every day, not all period, but once every day for three weeks. During the third week he finally began to realize what I was trying to say. It was a hassle." (Social Sciences)
>
> "Once in a while you get sort of a smart-alec. Usually, if you give them enough rope, they'll hang themselves. The rest of the class will start laughing at them." (Humanities)

On the other hand, men associate professors were more likely to handle challenges, not by discussing them, but by explaining how the student was wrong or inaccurate. This usually involved responding to the challenge with a defense of their own position:

> "He challenged things like the dates. I said, 'I know they are the dates because I just put this lecture together.' He said, 'No,

> you're wrong.' I said, 'Well, I don't think I'm wrong.' It went on like this so I finally said, 'Look, I know I'm right...if you'd like to come to my office I'll show you books and articles that I used to draw up my lectures.' (Humanities)
>
> "I try to explain why it is that certain opinions are inadequate or incorrect, and that there are all different levels of interpretation, and at certain levels you can say this is right and this is wrong." (Humanities)

Full professors encountered verbal challenges less frequently but a few instances were mentioned by the women. In these cases the challenges came during the first few days of classes and were responded to directly and immediately. One woman, teaching a course about science reported that she always receives a few challenges at the beginning from male science majors. Another woman in the natural sciences also reported initial resistance until she demonstrated her knowledge of the subject. Both women characterized these instances as minor testing behaviors that were routinely and quickly dealt with.

Challenges to competency, therefore, were experienced by women at all ranks. Female assistant professors welcomed these challenges as long as they were direct; however, even though they worried about the indirect ones, they handled them by ignoring them. Associate women used class time to discuss the issues with the students and full professors quickly stopped the challenges.

Male professors at the assistant and associate ranks, but not at the full rank, reported challenges to their competency. Assistant males would divert the challenger and request s/he come to his office later to discuss the differences. Associates, on the other hand, would tell the student in class why his/her ideas were inadequate or wrong.

Lack of student participation. The fourth management problem concerns the extent to which professorial authority interferes with implementing the good teaching model. Often, students were reluctant or unwilling to participate in classroom professor/student interaction; sometimes students failed to engage in class discussions or they asked no questions, or they made no comments concerning the material they were learning. Since all of the professors wanted to use at least one of these types of interaction in their teaching, the potential for such problematic student behavior was present in every case. The analysis revealed differences related to sex and rank but not discipline or sex-ratio of departments.

At the assistant professor level none of the women reported problems with eliciting student interaction in the classroom. In fact, several felt that their female status encouraged student input. As one woman explained: "I really do think that one of the reasonsstudents are more open to asking questions...(is) because I'm a woman" (Social Sciences). Another commented:

> "I'm very concerned about how my students are feeling, how they're reacting with each other and me. I think that's very much because women are taught to think about it and worry about it and men aren't as much." (Humanities)

Men assistant professors tended to describe the opposite situation. They felt that their status as male hindered professor/student interaction and mentioned several strategies designed to de-emphasize their authoritativeness. These strategies included joking with the students ("I use a little humor to break the ice"), using relaxed body language ("To promote class discussion... my usual style is to sit on top of the desk cross-legged or lotus position or legs hanging"), and dressing informally ("I don't wear coats and ties"). Some of the men articulated the conflict they felt between expectations that they be authoritative as well as open to students' spontaneous ideas and questions. A social science professor described this as "an anomoly for males" since they are expected to behave authoritatively and still be responsive to students "rather than just saying 'Well here it is. Take it or leave it'."

At the associate level, women professors were unanimous in their enthusiasm for an interactive classroom teaching style. Some used it exclusively while others combined it with lecturing. Absent from these women's comments were mentions of special techniques used to "break the ice" or problems getting students to talk in class. In addition, all the women mentioned that they enjoyed the "give and take" of classroom interaction.

Men associate professors also elicited student interaction, but here a different attitude was apparent. The men were more likely to view class discussions and student comments as something they should encourage rather than something they enjoyed and wanted to encourage. In the words of one professor:

> "In an honors course of fifteen students you get lots of feedback, and in a course of two hundred students you may have to point a finger, but I do it. It's worth wasting ten minutes out of an hour lecture to get feedback from the students." (Emphasis ours.) (Natural Sciences)

In addition, associate males, like the assistant males, felt that their position as an authority constrained student/professor interaction. The professors mentioned various ways they managed this situation. One Humanities professor who felt his students were frightened of him tried to counter this by dressing informally and allowing students a large amount of time to make their comments. Another in the social sciences explained:

> "I try to get to class early and try to talk with different students before class begins, just to be there (to) introduce elements of informal exchange."

At the level of full professor few difficulties with eliciting interaction were mentioned. Two of the women said they only experienced this problem when students were unprepared, and most of the men did not mention this issue. However, two of the men did note that it had become harder for them to relate to students, although they tried to do so. One man explained:

> "When I came here as a young instructor I had a much easier rapport with students. Then I found as I became an associate and a full professor, was on university senate, was a publishing scholar, there was a gap created by my status." (Natural Sciences)

In summary, then, females regardless of rank, disciplinary orientation or sex-ratio report no management problem in terms of getting students involved in discussion. Assistant and associate male professors view their status as males and authority figures as having a dampening effect on classroom interactions, and some full male professors saw themselves as having difficulty relating to the students. These data support our contention that women professors perceive their authority as less legitimate in the classroom, that they devise strategies to establish this legitimacy, all the while being careful not to use harsh strategies that may cause resentment. Men, on the other hand, have greater latitude in devising strategies, since they operate from a position of granted authority.

Concerning management problems, no differences based on sex-ratio or disciplinary orientation emerged, though rank and sex were related to the responses of faculty to these problems. At the assistant and associate levels, females reported using strategies (ignoring, gently reprimanding, encouraging discussion of professor/student differences) that legitimated their authority as they also reduced their appearance of authority. In contrast, the male assistants and associates stated they reprimanded publicly and harshly, directly corrected students' misconceptions, and "point-proved" outside of the classroom. That is, the males report less hesitancy in displaying their legitimacy as authorities, and report using strategies that, even when similar to the females, were more direct and potentially humiliating to the students. In addition, males rather than females report having difficulty in getting students to participate or in relating to them. Thus, although males saw their authority as having a dampening effect on students, they nevertheless *used* it to maintain control in classroom management situations.

CLASSROOM MANAGEMENT OF AUTHORITY

Professors differ by sex, then, in their perceptions of their authority and in their claimed handling of classroom management problems in ways which are consistent overall with our theoretical perspective. However, because professors claim they behave in certain ways does not necessarily mean they do, in fact, behave in those ways. To discover their actual behavior we use the material we have gathered in our direct observations of professors' teaching.

We have organized professors' classroom behaviors (for this chapter) under the two conceptual categories which have informed this chapter; namely (1) behaviors which increase the appearance of authority, and (2) behaviors which decrease the appearance of authority. The reader will remember that we postulate that women will devise strategies through which they can accomplish both simultaneously, whereas men will have greater range of strategies, and will primarily focus on those which reduce their appearance of authority. We also consider, as a separate category, the harshness of attempts to establish the appearance of authority. We expected women to use less harsh techniques.

Classrooms are settings in which professors, by virtue of their position, have certain rights and privileges not accorded to students. One of these rights is the right to set standards, to evaluate the "correctness" of students' responses, and to do these evaluations in the manner they choose. So, for example, the professor has the authority to give verbal or non-verbal and positive or negative or ambivalent feedback to students in a gentle or harsh way. Hence, one way in which a professor can reduce or increase her/his appearance of authority is through feedback to students which either limits or enlarges her/his position as the *authority* in matters of evaluation of student input. We refer to this dimension of authority as "*evaluative authority*."

A second right that professors have by virtue of their position is the right to control the distribution of class time. They can, if they choose, use most of it for presenting their own ideas and discourage student input, or, they can "give" the time over to the students and encourage student comments, questions, and ideas. In the former case, the professor is claiming his/her right to be the sole subject-matter authority, whereas in the latter the professor is distributing that authority, including the students as potentially "equal partners" in the pursuit of substantive issues. Therefore, professors can reduce or increase their appearance of authority along this dimension also. They can hold all or nearly all the class time for their presentations, or they can allocate time for student input, more time than that required by good teaching norms. Also, professors can encourage a type of student participation that goes beyond good teaching requirements. Students can be encouraged to make independent contributions to the class. In these ways, then, professors can give "subject-matter authority" to their students. As hypothesized in Chapter One, we expected women to use strategies that both increase and decrease their appearance of authority in the classroom. Based on our theoretical perspective and the research literature (see Chapter One), we expect women to be high in evaluative authority and low in subject-matter authority.

Evaluative Authority

We have used three indicators of evaluative authority (see Table 5-A). Each of the behaviors is a way in which professors evaluate students. These evaluations may be negative or positive; often, the positive reinforcement was unspoken. Table 5-A (top half) presents the means and standard deviations for evaluative authority behaviors for males and females by sex-ratio of department. These differences are visually presented in the supplementary Figures 5-A and 5-B (Appendix B).

Table 5-A about here

To estimate effects of sex and male-domination, regression equations estimating these effects are presented in Table 5-B. Independent of class size, course level and tenure of professors, women tend to give more positive and negative feedback. That is, they are more likely than men to use behaviors that increase their appearance as "evaluative authorities," persons in charge of making judgments about the "correctness" of the student's input.

Table 5-B about here

We also have measures of the harshness of professors' attempts to establish themselves as legitimate classroom authorities (middle panel Table 5-A). We expected women to use less harsh techniques. Because of the role conflict they experience, women might give evaluative feedback in a less direct way, hence, we expected them to use more partial positive ("yes...but") and negative feedback ("no...but") than the men. Admonishments included routine directive statements ("Open your books," "Turn to page 31," "Please notice the underlining here"), as well as harsher statements and therefore, may be equally used by males and females. Other authority control strategies may be less characteristic of women. Ridicule, which included only harsh statements ("That's a dumb thing to say!"), we predicted would be infrequently used by women. And, since interrupting other speakers is a dominance strategy that women are unlikely to use in other settings (Thorne, 1979), we expected women to be less likely to interrupt students as well.

Women do give more partial positive and negative feedback, though the sex difference for partial negative feedback is not statistically significant (Table 5-C). Neither difference is as great as the sex differences in unqualified positive and negative feedback (Table 5-B). Hence, women show no strong tendency to qualify their evaluative feedback--probably because this is a major source of their classroom authority.

Table 5-C about here

Harsher control techniques occur with less frequency. No sex differences exist in the tendency to interrupt, but, unexpectedly, women use admonishments more often and, as predicted, ridicule less often. This increased use of admonishments by women makes some sense, given the extent to which our admonishment measure is confounded with evaluative control and managerial behaviors, both of which are more characteristic of women. The sex difference in ridicule suggests that women do refrain from using harsh control techniques, a finding which coincides with the female professor's own accounts of using gentler, less direct strategies in dealing with management problems.

Subject Matter Authority

To measure the extent to which professors differ on their presentations of self as subject-matter authorities, the sole person in the classroom who "knows" the material, we looked at the amount and kinds of student input in the classrooms. Four indicators were used: (1) student challenges, (2) student assertiveness; (3) student evaluative statements; and (4) interruptions by students. All student behaviors were also tallied to find the total amount of time students spoke in the classrooms.

Mean differences in these behaviors are in the bottom panel of Table 5-A, and Figure 5-C visually supplements these data (Appendix B). To estimate the independent effects of sex and sex-ratio, we present regression equations estimating those effects in Table 5-D.

Table 5-D about here

In women's classes there is more student input than in men's classes. This is true for women's classes regardless of male-domination, rank, class-size or course level. Not only do students respond more in women's classes, they are more assertive in these classes. Recall that the student assertiveness measure combines students presenting original material and giving evaluative feedback. Since the giving of evaluative feedback is not significantly different by sex of professor, the significant effect for student assertiveness must result from a significant tendency for students to present more original material in women's classes. Since women give greater time to students and appear to encourage student assertiveness, they must, thereby, be reducing their appearance of legitimate subject-matter authority. Note, however, that women professors do not appear to receive more challenges to their authority--either in the form of direct student challenges or student interruptions.

In sum, we find support for our argument that women are likely to use strategies that both increase and decrease their appearance of authority in the classroom. They are more likely than men to increase their appearance of evaluative authority by giving more feedback, positive and negative, and simultaneously to decrease their appearance of "subject-matter authority" by encouraging student input and involvement in the substantive issues of the course. Men seem to feel less pressure toward adopting either strategy and, further, seem less constrained from using harsh control techniques with their students.

Tenure Differences

To see if tenure differences had discernible behavioral consequences, we re-estimated the regression equations, adding an interaction term for sex and tenure. Since few of these interactions were significant, we do not present these results, but simply describe those which were significant.

As before, the greatest sex differences were found between the tenured men and tenured women. Tenured women were more likely to use behaviors which increased their evaluative authority (positive and negative feedback, specifically) and decreased their subject-matter authority (student asking questions and volunteering new ideas, specifically). These effects occurred independent of course level and class size. Further, independent of course level and class size, male and female untenured professors tend to be quite similar in their use of authority--with both of them likely to increase evaluative authority and reduce subject-matter authority.

Unfortunately, our observational material cannot be directly compared to the major rank differences we discovered in the interviews. This is so because our observations include few women at the full professor rank (reflecting their severe underrepresentation in the university). However, as the reader will recall, because assistant women, assistant men and associate women are similar to each other in management strategies, and because the tenured women in our observational sample are primarily associates, the strong sex-differences between tenured male and female are consistent with the interview findings. Male and female at the lower ranks are similar in style. At the associate level, males begin to be less invested in teaching interactively and less concerned with management strategies, but women retain that investment until full professorship is attained. At that point, they are similar to the full male professor, with neither of them being very concerned with authority issues.

CLASSROOM AUTHORITY AND STUDENTS' EVALUATIONS

Thus far, we have seen some evidence to support our general thesis that women will find strategies that simultaneously increase their appearance of legitimacy, and decrease their appearance of authoritarianism. From our observational materials, on the two dimensions of authority, we found that women increased their evaluative authority while decreasing their subject-matter authority in the classroom. We now need to know whether the management of authority used by male and female professors is correlated with students' evaluations.

As the reader will recall, the students evaluated their professors along two dimensions: competency and likeability. We show first the correlations between professors' authority behaviors and students' evaluations of competency and likeability (see Table 5-E).

Table 5-E about here

The differences we observed were most interesting when we considered our four sex/male-domination subgroups separately. Perhaps the most striking aspect of these findings is that only one significant correlation appears for those in non-male-dominated departments: men who were frequently interrupted by students receive high likeability ratings. Put another way, no matter how male or female professors in a non-male-dominated department handle their authority (with the one exception noted), their evaluations as "competent" or "likeable" are not affected. Apparently, students in these situational contexts, do not incorporate either evaluative authority or subject-matter authority style into their evaluation of their professor.

However, although the results are not statistically significant, there are some clear differences in direction of the evaluation of males and females in non-male-dominated departments. In general, women who employ strategies to increase their evaluative authority in the classroom are judged more competent than men who do so, and also more likeable. Further, women who are low in subject-matter authority are liked more than their male colleagues who behave similarly.

In the male-dominated departments, on the other hand, more authority behaviors are significantly correlated with students' evaluations. Looking at evaluative authority, we find that men in those departments are judged more competent, the more negative feedback they give, and judged more likeable, the more positive feedback they give. No significant affects appear for women in these departments.

Harshness of control techniques had two significant effects; women in male-dominated departments who give partial negative feedback are judged to be less competent, as are women who interrupt students. No wonder then, that women do not use these strategies more often. In keeping with our hypotheses, female-typed nondirective strategies seem to result in lower competency ratings.

When we look at the subject-matter authority dimension, more sex differences emerge in these male-dominated departments. For men, the more total student input and the more students present original material, the higher the professor's competency and likeability scores. For women in these departments, the more they solicit student input and the more students contribute evaluative statements, the more they are liked. However, if students interrupt frequently, they are judged less competent.

Likeability and competence scores, as the reader will recall, were built from specific items on the Student Evaluation of Teacher form (see Chapter Two). The correlations of these individual items by sex and sex-ratio are presented in Tables 5-F-1 - 5-F-4.

Tables 5-F-1 - 5-F-4 about here

The patterns of correlations with individual items for both groups of women (see Tables 5-F-3 and 5-F-4) is highly consistent with the aggregate results. Quite clearly, positive feedback (in male-dominated departments) and high student participation decrease competency scores and increase likeability scores of women. For men in male-dominated departments, the item analysis is also consistent with scale results. The more the positive and negative feedback and the more the student participation, the higher the competency and likeability scores. However, for men in the non-male-dominated departments, several forms of student participation lowered their competency scores, and had mixed effects on their likeability scores.

Although the findings based on the composite and item analysis are inconclusive, we would suggest that they are consistent with our theoretical perspective (see Chapter Two). Women who use more traditional "feminine" behaviors (e.g., partial evaluations, being interrupted) are viewed as less competent and more likeable. However, their use of "masculine" stereotyped behaviors, in contradition to our theoretical argument, does not affect their likeability or competency scores. Men, as we would predict, are generally judged more competent regardless of what they do, and more likeable to the extent that they violate traditional "masculine" behaviors by eschewing the sole subject-matter authority role in the classroom and by including in their repertoire of evaluative authority behaviors both positive and negative feedback. Additionally, use of any of these behaviors by men in male-dominated departments increases student assessments that they are both likeable and competent. Men in non-male-dominated departments, however, who use those non-male-typed strategies reduce their competency scores. In this respect, men in non-male-dominated departments may be in a double-bind similar to that of women. The less control they maintain as subject-matter authorities, the less competent but more likeable they are judged. This finding is wholly consistent with our interview data concerning male professors' views of students expectations that they play a "macho" role.

Independent effects on competency and likeability ratings. To get better estimates of the impact of authority management behaviors on the two dimensions of student evaluations we are interested in, we estimated regression equations for these effects, controlling for class size, the male-domination of the department, and the proportion of students in each class who were females. We estimated effects of behaviors that seemed most interesting and important in the previous analysis. These equations were estimated separately by sex to allow for the hypothesized sex difference in the impact of these various behaviors on student evaluations.

Structural factors. Structural factors are quite important in predicting student evaluations of their professors' competency and likeability. Professors teaching smaller classes receive higher evaluations, both in competency and likeability, regardless of sex (though the effects were somewhat larger for men); male professors who teach classes with higher proportions of female students receive higher competency ratings, perhaps the result of the "flirting" some male professors reported in the interviews. One man, for example, asserted that "women seem to be more responsive to me in class." These results attest to the truth of that statement and suggest that it is a general phenomenon. Women who teach classes with high proportions of males do not receive higher evaluations. Male professors in non-male-dominated departments receive higher likeability ratings, an effect that does not accrue to women in these departments.

Table 5-G about here

Table 5-G shows the impact of positive and negative feedback statements by the professor. The impact of positive or negative statements is not significant for either sex, although partial positive statements increase the competency and likeability ratings of female professors. Thus, controlling for structural differences in classes (size, proportion female, etc.), women do benefit--when this positive feedback is indirect or tagged on to another kind of statement (in some cases, a negative feedback statement). That is, if they modify their evaluations in traditionally "feminine ways" they are more highly evaluated by their students.

Table 5-H about here

Table 5-H shows the independent effects of total student input and students' presenting of original material, two important indicators of the extent to which the professor relinquishes subject-matter control in the classroom. None of these effects is significant for either sex, however. The structural variables show the same general patterns of effects discussed above.

Another interesting set of variables, in terms of zero-order correlations, were those measuring the propensities for professors and students to interrupt one another. Student interruptions, especially, figured heavily in women's evaluations, especially those of likeability. Table 5-I shows that even controlling for these other factors, women professors receive higher likeability scores the more the student interrupts. Thus, women are rewarded affectively for relinquishing some of their subject-matter authority. However, these results do not show the same effect for general student participation (Table 5-G) we found with the zero-order correlations, nor do these results show the double-bind phenomenon of traditional feminine behaviors such as partial positive feedback (Table 5-F) resulting in lower competency ratings.

Table 5-I about here

Too Authoritarian

The item, "This professor is sometimes too authoritarian" on the student evaluations was not, as the reader may recall, included on either the competency or likeability scales because of the results of the reliability analysis. However, it probably represents a distinct and separate dimension, and as an evaluative item may tell us a great deal about students' feelings about how the professor handled authority.

Zero-order correlations for our four subgroups of respondents are in Tables 5-F-1 to 5-F-4; regression results are presented in Table 5-J. One immediate conclusion from both sets of results is that these authority behaviors have more impact on students' authoritarian assessments of women than of men; more significant effects appear for women--especially for women in non-male-dominated departments (Table 5-F-4). For this latter group of women,

Table 5-J about here

evaluative feedback decreases the students' perceptions that the woman is too authoritarian, though partial negative feedback and unspoken positive feedback increases perceptions that she is authoritarian. This positive effect of partial negative feedback appears even in the regression results (Table 5-J). Students also perceive men in male-dominated departments to be more authoritarian when they make positive judgments (Table 5-F-1). Hence, in general, use of evaluative authority increases student perceptions that the professor is too authoritarian, especially for women. Men in male-dominated departments who interrupt students are also perceived to be more authoritarian.

Surprisingly, a professor's reduction in subject-matter authority, obstensibly a less authoritarian classroom procedure, in fact increases student perceptions that the professor is authoritarian. The more they interact with students, the more authoritarian they are perceived to be. This occurs as often for men as it does for women. Women are viewed as more authoritarian the more interruptions they receive from students (Table 5-J), a zero-order effect that is true only of women in non-male-dominated departments (Table 5-F-4). A zero-order effect appears for solicited student responses for women in male-dominated departments (Table 5-F-2).

No zero-order effects appear for either group of men, though several variables are significant in the regression equations. Total student input increases the students' views that male professors are authoritarian, as do student interruptions. Perhaps the professor's direct response to the student is often authoritarian, a tendency that women seem only to have in regard to student interruptions, while men may more often respond this way to all student input. Thus, professors who interact less with students may simply be exposed less often to the risk of appearing authoritarian. We have not yet examined our data for the sequencing of behaviors, only the frequency of their occurrence, so we can only speculate on this matter at this point. However, we will soon construct a data file that will enable us to examine such possibilities.

In contrast to our other findings about student evaluations, structural features of the class were not nearly as important in determining student perceptions of the professor's authoritarianism. The proportion of the class that was female still had an important effect for men, however, apparently female students are less likely than male students to perceive male professors as being authoritarian.

SUMMARY

These results show important sex differences in the management of classroom authority. While both sets of data suggest few sex differences in the challenges professors actually receive in the classroom, marked sex differences existed in perceptions of authority and strategies for managing it. The women in our interview sample, especially assistant professors in male-dominated departments, felt a strong need to establish the legitimacy of their authority position; they felt students had more doubts about their competency than they did about male professors. However, their strategies for establishing their legitimacy seemed designed to avoid student resentment. The women in both of our samples used less direct, harsh, offensive means of dealing with students than male professors and gave considerably more subject-matter authority to their students. They were, however, quite strong in their authority stands; they made heavy use of their evaluative authority and, as their rank increased, reported themselves to be quite adept at confronting direct student challenges.

Student reactions to these management strategies are puzzling. They had little impact on competency evaluations and more impact on likeability reactions. Professors who retained less subject-matter authority by generating more student input were seen as more likeable--although in some instances, less competent. This double-bind existed for women and men in non-male-dominated departments. Lower subject-matter authority, however, led to increased perceptions that the professor was "too authoritarian." Perhaps the student participation (an indication of lower subject-matter authority) simply provides the professor with more opportunities to appear "too authoritarian," although it is surprising that students would "like" these professors more. Perhaps they simply feel they know them better, regardless of the "mistakes" they might have made in the classroom.

Use of evaluative authority had little impact on student evaluations, though it does increase perceptions that the professor is "too authoritarian." Also, professors who refrain from using harsh control techniques are better liked by their students and, among women in male-dominated departments, are seen as more competent. In general though, it seems these management techniques are important because of their impact on the emotional climate of the classroom, not because they affect a professor's competency rating. To the extent that this emotional climate is more important for women and mere dependent upon their management strategies, authority management issues will be more critical for women. All of our data indicate that this is, indeed, the case.

Table 5-A

Means and Standard Deviations for Authority Management Behaviors by Sex and Department of Professor

	Men--Male-Dominated Dept.		Women--Male Dominated Dept.		Men--Non-Male Dominated Dept.		Women--Non-Male-Dominated Dept.	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Evaluative Authority								
Positive Evaluations	.012	.011	.023	.022	.022	.021	.042	.079
Negative Evaluations	.005	.006	.005	.005	.004	.005	.008	.020
Unspoken Positive Reinforcement	.000	.000	.000	.002	.000	.001	.000	.000
Harshness of Control Techniques								
Admonishments	.002	.005	.004	.010	.002	.006	.004	.009
Ridicule	.001	.001	.000	.002	.001	.002	.000	.001
Partial Positive Evaluations	.002	.006	.002	.003	.002	.004	.007	.027
Partial Negative Evaluations	.002	.005	.005	.021	.002	.004	.001	.002
Teacher Interrupts	.001	.003	.001	.002	.001	.005	.002	.006
Subject-Matter Authority								
Total Student Input	.082	.059	.136	.091	.116	.080	.164	.329
Student Challenges	.004	.022	.003	.011	.002	.007	.002	.004
Student Assertiveness	.008	.017	.022	.032	.020	.030	.045	.132
Student Evaluative Statements	.001	.002	.002	.012	.003	.006	.004	.014
Interruptions by Students	.001	.002	.001	.002	.002	.004	.000	.001

Table 5-B

Regressions Predicting Evaluative Authority

	Negative Feedback		Positive Feedback	
	b	Beta	b	Beta
Sex of Professor	.003	(.153)*	.020	(.258)*
Male Dominated Department	.002	(.119)*	.002	(.029)
Rank of Professor	.002	(.170)*	.008	(.175)*
Class Size	-.001	(-.055	.005	(-.111)
Course Level	.000	(.088	.000	(-.018)
Constant	-.002		.004	
R^2	.057		.077	

Table 5-C

Regressions Predicting Harshness of Control Techniques

	Partial Negative Feedback		Partial Positive Feedback		Teacher Interrupts		Admonishments		Ridicule	
	b	Beta	b	Beta	b	Beta	b	Beta	b	Beta
Sex of Professor	.001	(.060)	.001	(.179)*	-.000	(-.063)	.001	(.143)*	-.001	(-.125)*
Male Dominated Department	-.002	(-.095)	.002	(.081)	-.001	(-.082	-.001	(-.073)	.0001	(.031)
Rank of Professor	.000	(.004)	.003	(.198)*	.0001	(.018)	.001	(.176)*	.0003	(.173)*
Class Size	.002	(.146)*	-.0001	(-.001)	-.000	(-.072)	.0002	(.048)	-.0001	(-.036)
Course Level	-.0001	(.000)	.001	(.123)*	.0001	(.059)	-.0001	(-.055)	.0002	(.044)
Constant	.001		-.011		.002		-.001		-.0001	
R^2	.033		.063		.026		.041		.072	

Table 5-D

Regressions Predicting "Subject Matter" Authority

	Total Student Input		Student Assertiveness		Student Challenges		Student Interrupts		Student Evaluative Comments	
	b	Beta	b	Beta	b	Beta	b	Beta	b	Beta
Sex of Professor	.065	(.202)*	.027	(.222)*	.001	(.033)	-.001	(-.117)	.001	(.075)
Male-Dominated Department	.000	(.001)	.007	(.055)	.001	(.035)	-.001	(-.128)	.000	(-.017)
Rank of Professor	.019	(.107)	.011	(.165)*	.001	(.093)	-.000	(-.098)	.0000	(.004)
Class Size	-.017	(-.093)	.001	(.017)	.001	(.067)	.0001	(.016)	-.001	(-.137)*
Course Level	.005	(.070)	.005	(.176)*	.001	(.173)*	.000	(.232)	-.000	(-.059)
Constant	.057		-.050		-.009		.001		.006	
R^2	.056		.025		.062		.089		.023	

Table 5-E

Zero-Order Correlations Between Authority Management Behaviors and Student Evaluations

	Men--Male-Dominated Dept.		Women--Male-Dominated Dept.		Men--Non-Male-Dominated Dept.		Women--Non-Male-Dominated Dept.	
	Comp.	Like.	Comp.	Like.	Comp.	Like.	Comp.	Like.
Evaluative Authority								
Teacher Positive Judgments	.207	.259*	-.025	.141	-.094	-.139	.070	-.080
Teacher Negative Judgments	.238*	.170	-.003	.128	-.070	-.153	.086	-.046
Unspoken Positive Feedback	.206	.152	.000	.000	.086	.051	.234	.192
Harshness of Control Techniques								
Teacher Partial Positive Judgments	.142	.127	-.019	.091	-.034	-.073	.047	-.021
Teacher Partial Negative Judgments	-.062	.002	-.342*	-.120	.116	.124	.252	.217
Teacher Admonishes	.123	.101	-.115	-.066	-.041	-.009	-.053	-.085
Teacher Interrupts	-.101	-.171	-.286*	.054	.093	.028	-.097	-.023
Subject Matter Authority								
Total Student Input	.230*	.256*	-.014	.111	-.180	-.148	-.136	-.008
Student Presenting Original Information	.224*	.215*	-.050	.100	-.196	-.237	-.022	-.004
Student Challenges	.099	.077	-.149	.006	-.069	-.050	.098	.023
Student Evaluative Statements	.105	.138	.196	.312*	-.031	-.049	.081	-.049
Student Interrupts	.203	.185	-.338*	-.041	.079	.040	.043	.348
Student Responses	.116	.104	.160	.334*	-.061	-.099	.181	.076

*Coefficients significant at .05 level.

Table 5-F-1

Correlations Between Student Evaluations and Authority Behaviors
Men in Male-Dominated Departments

	Competency Items							Likeability Items			
	Teacher Prepared	Teacher Has Thorough Knowledge	Teacher Communicates Well	Teacher Is Stimulating	One of Best Teachers at Univ.	Teacher Presentations are Logical	Best Male/Fem Teacher Have Had	Teacher Responsive to Students	Teacher Considerate of Students	Want to Know Teacher Informally	Teacher Too Authoritarian
Teacher Positive Judgments	-.091	.127	.136	.105	.279*	.150	.264*	.313	.177	.241*	.348*
Teacher Negative Judgments	.025	.001	.216*	.285*	.214*	.209	.062	.038	.153	.180	.062
Unspoken Feedback	.139	.050	.161	.208	.156	.184	.188	.122	.129	.140	.090
Teacher Admonishes	.132	.046	.126	.123	.114	.184	.110	.029	-.118	.079	-.063
Teacher Interrupts	-.069	.038	.051	.052	.171	.015	.167	.152	.095	.158	.245*
Teacher Partial Positive Judgments	.059	.081	.131	.115	.108	.073	.148	.161	.155	.122	.171
Teacher Partial Negative Judgments	-.073	.085	-.062	-.105	-.001	-.062	-.041	.028	-.044	-.025	.025
Total Student Input	-.078	.140	.179	.174	.301*	.151	.248*	.268*	.172	.200	.167
Student Presenting Original Information	-.053	.122	.147	.232*	.196	.204	.218	.249*	.261*	.242*	.094
Student Challenges	.079	.064	.107	.077	.060	.055	.079	.106	.117	.081	.140
Student Evaluative Statements	-.151	.096	.070	.084	.083	.130	.176	.168	.139	.166	.080
Student Interrupts	.068	.104	.181	.184	.175	.135	.196	.214*	.168	-.188	.170
Solicited Responses	.086	.086	.085	.100	.089	.107	.112	.100	.077	.091	.090

*Coefficients significant at .05 level.

Table 5-F-2

Correlations Between Student Evaluations and Authority Behaviors
Women in Male-Dominated Departments

	Competency Items							Likeability Items			
	Teacher Prepared	Teacher Has Thorough Knowledge	Teacher Communicates Well	Teacher Is Stimulating	One of Best Teachers at Univ.	Teacher Presentations are Logical	Best Male/Fem Teacher Have Had	Teacher Responsive to Students	Teacher Considerate of Students	Want to Know Teacher Informally	Teacher Too Authoritarian
Teacher Positive Judgments	-.085	.066	-.064	.055	-.010	-.209	.076	.134	.042	.228	-.083
Teacher Negative Judgments	-.053	.089	-.040	.069	.002	-.188	.095	.130	.033	.200	-.096
Unspoken Positive Feedback	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Teacher Admonishes	-.229	-.395*	-.048	.007	-.118	-.022	-.061	.095	-.136	.049	-.137
Teacher Interrupts	-.417*	-.504*	-.268	-.083	-.277	-.226	-.182	-.068	-.070	-.013	.131
Teacher Partial Positive Judgments	-.039	.097	-.065	.048	-.014	-.220	.079	.075	-.012	.199	-.133
Teacher Partial Negative Judgments	-.449*	-.294*	-.357*	-.329*	-.286	-.265	-.261	-.082	-.102	-.162	.084
Total Student Input	-.074	.054	-.041	.068	.001	-.195	.075	.095	.012	.236	-.149
Student Presenting Original Information	-.101	.029	-.068	.028	-.041	-.223	.040	.090	-.014	.209	-.111
Student Challenges	-.209	-.217	-.111	-.076	-.104	-.142	-.163	.005	.060	-.047	.062
Student Evaluative Statements	.125	.120	.223	.243	.192	.134	.164	.327*	.303*	.253	.238
Student Interrupts	-.384*	-.312*	-.346*	-.245	-.286	-.387*	-.254	-.109	.025	-.022	.155
Solicited Responses	-.042	.018	.181	.241	.213	.137	.163	.369*	.295*	.278	.472*

*Coefficients significant at .05 level.

Table 5-F-3

Correlations Between Student Evaluations and Authority Behaviors
Men in Non-Male-Dominated Departments

	Competency Items							Likeability Items			
	Teacher Prepared	Teacher Has Thorough Knowledge	Teacher Communicates Well	Teacher Is Stimulating	One of Best Teachers at Univ.	Teacher Presentations are Logical	Best Male/Fem Teacher Have Had	Teacher Responsive to Students	Teacher Considerate of Students	Want to Know Teacher Informally	Teacher Too Authoritarian
Teacher Positive Judgments	-.022	-.138	-.006	-.092	-.152	-.019	-.141	-.090	-.117	-.072	-.075
Teacher Negative Judgments	-.214	-.196	.086	-.017	-.068	.051	-.120	-.071	-.216	-.222	-.073
Unspoken Positive Feedback	.152	.036	.084	-.009	-.006	.022	.121	.223	.208	.034	.189
Teacher Admonishes	-.104	-.042	-.107	.033	.019	-.139	.013	.061	.007	-.050	.026
Teacher Interrupts	-.116	.044	-.095	-.080	.002	-.146	-.021	-.040	-.147	-.104	-.053
Teacher Partial Positive Judgments	.066	-.089	.081	-.006	-.114	-.015	-.104	.028	-.060	.051	.067
Teacher Partial Negative Judgments	.152	.061	.147	.059	.077	.101	.106	.090	.096	.195	.172
Total Student Input	-.373*	-.383*	-.210	-.040	-.153	-.295*	-.172	.147	.066	.067	.235
Student Presenting Original Information	-.146	-.287*	-.156	-.150	-.179	-.190	-.267*	.065	-.105	-.166	.044
Student Challenges	-.028	-.241	.114	-.017	-.103	-.072	-.070	-.007	-.231	.162	.034
Student Evaluative Statements	-.095	-.253	.166	.085	-.064	-.090	.074	.084	-.123	.126	.193
Student Interrupts	.068	-.018	.071	.056	-.011	.011	.084	.271*	.229	.074	.255
Solicited Responses	.095	.043	-.058	-.041	-.032	.121	-.116	-.252*	-.300*	-.206	-.204

*Coefficients significant at .05 level.

Table 5-F-4

Correlations Between Student Evaluations and Authority Behaviors
Women in Non-Male Dominated Departments

	Competency Items							Likeability Items			
	Teacher Prepared	Teacher Has Thorough Knowledge	Teacher Communicates Well	Teacher Is Stimulating	One of Best Teachers at Univ.	Teacher Presentations are Logical	Best Male/Fem Teacher Have Had	Teacher Responsive to Students	Teacher Considerate of Students	Want to Know Teacher Informally	Teacher Too Authoritarian
Teacher Positive Judgments	.064	.058	.138	.033	.054	.031	.068	-.104	-.082	-.045	-.260*
Teacher Negative Judgments	.155	.166	.030	.035	.080	.033	.116	-.016	-.068	-.046	-.278*
Unspoken Positive Feedback	.161	.189	.224	.215	.213	.280*	.216	.185	.182	.178	.256*
Teacher Admonishes	-.074	.152	-.002	-.092	-.032	-.007	-.041	-.072	-.054	-.111	-.155
Teacher Interrupts	.007	.151	.021	.132	.099	.138	.096	.009	-.058	-.016	.017
Teacher Partial Positive Judgments	-.009	-.119	.106	.032	.052	.088	.057	-.039	.021	-.038	-.126
Teacher Partial Negative Judgments	.148	.209	.239	.243	.232	.287*	.244	.221	.209	.186	.274*
Total Student Input	-.247	-.226	-.136	-.069	-.126	-.092	-.070	.095	.048	-.149	.052
Student Presenting Original Information	-.097	-.026	-.048	-.010	-.018	.043	.002	.091	.046	-.135	-.135
Student Challenges	.100	-.029	.158	.061	.063	.188	.053	.039	.064	-.032	.018
Student Evaluative Statements	-.053	.142	.139	.073	.027	.101	.109	-.025	-.024	-.084	-.031
Student Interrupts	-.199	-.324*	.049	.179	.084	.079	.138	.358*	.356*	.277*	.536*
Solicited Responses	.065	.168	.242	.163	.121	.233	.172	.075	.107	.038	.066

*Coefficients significant at .05 level.

Table 5-G

Impact of Evaluative Authority and Harshness of Control Techniques on Student Evaluations

	Competency		Likeability		Competency		Likeability		Competency		Likeability	
	b	Beta	b	Beta	b	Beta	b	Beta	b	Beta	b	Beta
Men Professors												
Class Size	-1.237	(-.380)*	-.459	(-.208)*	-1.239	(-.380)*	-.457	(-.207)*	-1.216	(-.373)*	-.448	(-.203)*
Teacher Negative Judgments	7.823	(.133)	13.587	(.034)								
Teacher Positive Judgments	-14.447	(-.073)	-.709	(-.005)								
Teacher Partial Negative Judgments					-17.679	(-.024)	8.365	(.017)				
Teacher Partial Positive Judgments					47.684	(.079)	31.156	(.076)				
Ridicule									9.537	(.045)	16.34	(.114)
Admonishments									-5.59	(-.058)	-1.08	(-.016)
Proportion Female	.003	(.215)*	-.001	(-.144)	.003	(.194)*	-.001	(-.151)	.271	(.192)	-.002	(-.160)
Male-Dominated Department	-.127	(-.019)	-1.062	(-.235)*	.088	(.013)	-1.030	(-.228)*	.025	(.003)	-1.103	(-.244)*
Constant	12.784		6.405		12.685		6.414		12.60		6.38	
R^2	.192		.102		.182		.107		.179		.113	
Women Professors												
Class Size	-1.021	(-.201)*	-.355	(-.188)*	-1.398	(-.275)*	-.486	(-.257)*	.995	(.195)*	-.367	(-.194)*
Teacher Negative Judgments	18.745	(.069)	-5.777	(.002)								
Teacher Positive Judgments	-5.812	(-.086)	.058	(.002)								
Teacher Partial Negative Judgments					5.873	(.246)*	1.989	(.224)*				
Teacher Partial Positive Judgments					-8.010	(-.038)	2.703	(.035)				
Ridicule									6.684	(.115)	23.67	(.115)
Admonishments									-1.818	(.023)	-2.458	(-.008)
Proportion Female	.009	(-.061)	.002	(.045)	-.009	(.061)	.002	(.040)	.066	(.046)	.021	(.039)
Male-Dominated Department	.541	(-.073)	-.148	(-.053)	.815	(.109)	-.051	(-.018)	.480	(.064)	-.127	(-.046)
Constant	12.256		5.199		11.751		4.965		12.380		5.161	
R^2	.040		.049		.094		.092		.053		.058	

Table 5-H

Impact of Reduction in Subject-Matter Authority on Student Evaluations

Men Professors

	Competency		Likeability	
	b	Beta	b	Beta
Class Size	-1.289	(-.400)*	-.453	(-.205)*
Total Student Input	-2.450	(-.052)	1.303	(.041)
Student Assertiveness	1.920	(.014)	-4.753	(.051)
Proportion Female	-.003	(.189)*	-.002	(-.150)
Male-Dominated Department	-.011	(-.002)	-1.067	(-.236)*
Constant	12.213		6.400	
R^2	.177		.103	

Women Professors

	Competency		Likeability	
	b	Beta	b	Beta
Class Size	-1.036	(-.204)*	-.356	(-.188)*
Total Student Input	-10.808	(-.066)	.466	(.076)
Student Assertiveness	-.033	(-.001)	-.438	(-.029)
Proportion Female	.096	(.067)	.022	(.041)
Male-Dominated Department	.540	(.072)	-.139	(-.050)
Constant	12.176		5.205	
R^2	.042		.048	

Table 5-I

Impact of Interruptions on Student Evaluations

	Men Professors				Women Professors			
	Competency		Affect		Competency		Affect	
	b	Beta	b	Beta	b	Beta	b	Beta
Class Size	-1.235	(-.379)*	-.445	(-.202)*	- 1.030	(-.202)*	-.399	(-.211)
Student Interrupts	85.765	(.084)	58.255	(.085)	-143.424	(-.065)	183.331	(.225)*
Teacher Interrupts	-38.510	(-.048)	7.621	(.014)	-130.218	(-.116)	-37.910	(-.091)
Proportion Female	.003	(.189)*	-.001	(-.154)	.001	(.070)	.003	(.051)
Male Dominated Department	.090	(.014)	-.991	(-.220)*	.341	(.046)	-.011	(-.004)
Constant	12.638		6.466		12.003		5.241	
R^2	.184		.108		.058		.096	

Table 5-J

Regression Equations Predicting Students' Assessment That the Professor Is Too Authoritarian with Authority Management Behaviors by Sex

	Men		Women	
	b	Beta	b	Beta
Class Size	-.006	(-.091)	-.123	(-.166)
Positive Feedback	3.682	(.095)	-.689	(-.071)
Negative Feedback	-6.058	(-.053)	-3.009	(-.076)
Proportion Female	-.006	(-.214)*	.0001	(.047)
Male Dominated Department	-.161	(-.123)	.126	(.117)
Constant	4.002		3.758	
R^2	.060		.045	
Class Size	-.006	(-.095)	-.181	(-.245)*
Partial Positive Feedback	1.601	(.135)	-4.143	(-.136)
Partial Negative Feedback	8.034	(.057)	9.076	(.262)*
Proportion Female	-.006	(-.214)*	.019	(.057)
Male Dominated Department	-.194	(-.148)	.174	(.161)
Constant	4.011		3.801	
R^2	.075		.103	
Class Size	-.004	(-.058)	-.121	(-.164)
Total Student Input	1.779	(.192)*	.006	(.026)
Student Presenting Original Information	-2.041	(-.075)	-.896	(-.150)
Proportion Female	-.005	(-.189)*	.0001	(.055)
Male Dominated Department	-.162	(-.124)	.129	(.119)
Constant	3.808		3.719	
R^2	.075		.040	
Class Size	-.005	(-.081)	-.122	(-.166)
Teacher Interrupts	4.921	(.031)	2.025	(.012)
Student Interrupts	3.975	(.199)*	1.222	(.384)*
Proportion Female	-.001	(-.081)	.0001	(.033)
Male Dominated Department	-.164	(-.126)	.184	(.170)
Constant	3.969		3.607	
R^2	.092		.168	

CHAPTER SIX

SEX DIFFERENCES IN PERSONALIZING

Both inside and outside of the classroom, professors are faced with decisions about how personal or impersonal they wish to be when dealing with students. The concept of personalizing refers to professors' attempts to create or preserve the personal, caring, human elements in their interactions and relationships with students.

In classroom situations, professors can personalize by using examples from their own and students' private lives. They can personally acknowledge students' contributions, and verbally empathize with their struggles over and successes with mastering the material. Any of these behaviors will help create a more humanistic, person-oriented class atmosphere. Outside of class time, professors can informally "chat" with their students, and listen to students' personal concerns and problems.

Personalizing may go even further than the authority reduction techniques discussed in Chapter Five to reduce student resentment of female professors. Personalizing is consistent with traditional female role expectations, and it may attenuate the impact of the professor's authority. Because female professors may feel especially reluctant and uneasy about wielding their authority, we expected they would be more likely to personalize than men.

Women who personalize may be judged more likeable by students, but less competent. (See Chapter One for theoretical argument and literature review.) In addition, we expected that students would similarly evaluate male professors who personalized, but that their reactions might not be as strong. (See Chapter One for a full statement of these hypotheses.) If supported, these hypotheses suggest that sex of professor has an important effect on the college classroom atmosphere and will have consequences for the students' evaluations of their teaching.

Our interview material permits us to look at professors' ideas about personalizing in the classroom and outside the classroom. Professors discussed the amount of personalizing they and their students do, the content of the personalizing, the setting for personalizing (inside or outside of class), and their attitudes toward it. Our observational material permits us to examine the actual personalizing behaviors of professors and students in the classroom. These include personal acknowledgements of students' contributions (e.g., "Thank you, Ben"), empathizing with students ("I know that was a tough question"), as well as personal statements about the self, about the students, and personal statements from students about their lives. We shall be interested in discovering whether or not the two sets of data are consistent.

We turn now to a discussion of professors' perceptions of their use of personalization. Following that, we look at the observational data regarding actual classroom behaviors, and then at the association of those behaviors with student evaluations.

PROFESSORS' PERCEPTIONS OF PERSONALIZING

The interviews elicited descriptions of numerous types of personalization occurring both inside and outside of the classroom. These accounts were content analyzed to discover if any trends or consistencies were evident. The analysis disclosed some sex- and rank-related differences in personalization while discipline and sex-ratio variations were less apparent.

Personalizing in the Classroom

Classrooms can provide an opportunity for students to share private elements of their lives, and an opportunity for professors to share their personal histories and experiences with students. We examine first the professors' comments about the kinds and amount of personal information they share about themselves, and then their reports of student presentations of personal material in the classroom.

Professors' personalizations in the classroom. Many of the professors reported that they shared personal information about themselves, their families, and their careers with their classes. Fewer male professors described this type of personalization than female faculty. There was also an important difference between men and women, regarding the nature of the information shared and their attitudes toward sharing. Many of the men regarded relating personal information as a duty, a presentation of credentials. One assistant humanities professor characterized the information he gave students as "the non-personal type personal information." Other men said they primarily talked about their academic career and professional qualifications, often limited to the first day of class. "Where I'm from, what degrees I have, what my interests are in the scholarly sense" were the topics covered by one man in the social sciences.

On the other hand, women professors conveyed personal information by using their private lives as well as careers, for examples and illustrations. One full professor noted: "I think I probably talk more than men about things in my life. I talk about my children and I will tend to use that for examples." An associate woman explained: "I talk about my experiences. They know me as a person fairly well." Frequently, however, the women choose examples and illustrations they viewed as relevant to the students' lives. They tried to "reach students where they live" so that, as one woman noted, "We can use our (students and faculty) lives as a way of understanding" the class material.

When women professors did discuss their careers they tended to do so in order to defend their subject-matter authority rather than trying to personalize, as revealed by the following statements of two female professors:

"I can see them looking at me and thinking, 'Oh yeah, sure.' Well then I'll stop and tell them some of the kinds of things that I've done and I haven't always been here teaching." (Home Economics).

"I get (challenges) in the big classes very early in the course, particularly from science majors who are, I suspect, willing...to challenge my science background. But it's very easily set off. I tell them about my educational background." (Humanities)

Overall, then, women were more likely than men to report presenting personal information to their classes and to view these personalizations as "building bridges" between the student experiences and their own. Women reported using their private lives and families as examples throughout the course. Only when challenged did women present detailed career information and qualifications; these challenges, incidentally, occurred at all the ranks. On the other hand, when men personalized, they tended to describe giving information concerning their own careers and credentials in a semi-formalized presentation.

Student personalizations in class. Another opportunity for personalization in the classroom occurred when students shared their private lives and experiences with each other and the professor. As one woman in the humanities explained, "I want it to be a kind of personal experience so I don't mind if they talk about themselves." A man in the natural sciences who relied on students for nutrition examples noted, "There's the obvious jock in the class and he is more than willing to tell them what he has to do to maintain his weight, his schedule, what he eats and why, etc." Several of the professors' descriptions of their best classes involved situations in which students exchanged personal information with each other and the professor. Overall, however, there were no systematic differences in sex, rank, or discipline between professors who reported student personalization in the classroom and those who did not.

Sex differences in personalization in the classroom according to the accounts in the interviews, then, rest in the differences in amount and kinds of revealing self-disclosures engaged in by the professor, rather than in the self-disclosures of the students. Women professors personalize more frequently, and use examples which they view as relevant to their students' lives. Men tend to present their credentials, and consider their career histories as personal. Women tend not to view their careers as "personal" and state their credentials when students challenge their substantive authority.

Personalizing Outside the Classroom

Situations outside the classroom also provide opportunities for informal interaction between students and faculty. We have analyzed two kinds of extra-class personalization reported by professors: "chatting" and listening to personal problems.

Chatting. "Chatting" involved an exchange between student and professor of largely non-academic, somewhat personal, but usually superficial information (e.g., student's future plans, other courses taught by the professor). Although we have classified chatting as an out-of-class form of interaction, chatting was sometimes described as occurring before or after class or during the mid-break period. Other chatting contexts mentioned by faculty were: in a professor's office; on the campus grounds; and in situations created by chance meetings (e.g., in the supermarket). Men were more likely to describe chatting in the classroom, while women were more likely to report this form of interaction outside of class. Some examples are presented below:

> "Now I go over earlier and try to get to know some people in the front row. I try to chat with them." (Male--Full--Humanities)
>
> "In this course we have coffee every day for ten minutes and we discuss a few things as well." (Male--Associate--Hard Sciences)
>
> "(On campus) students will just come up...and start talking to me about things, about the subject matter and sometimes about their

lives." (Female--Assistant--Social Sciences)

> "They just show up and they want to talk about research, or they want a reference, or they are interested in such and such." (Female--Full--Humanities)

In summary, then, while both men and women professors chatted with students, men were more likely to do so in the classroom while women described more examples of chatting outside of the classroom. In addition, as discussed in Chapter Five, men reported using chatting to reduce their appearance of authority whereas women did not.

Counselling. A second situation in which personalization was inherent, occurred when students discussed their personal problems with professors. This was most likely to occur during the faculty member's office hours. The content of conversations was characterized as more serious than that of chatting. One assistant male professor related the following extreme example:

> "She would come in and tell me all the latest adventures at home. Her parents got a divorce, her brother declared he was a homosexual, her sister ran away, the dog died, her father was on the verge of loosing his job, on and on." (Natural Sciences)

A woman professor stated: "All the students that have ever had nervous breakdowns in this place have had them in my office" (Associate--Humanities).

While both men and women reported that their students come to them with personal problems, the men were more likely to view this as an annoyance, and several questioned the motives behind such student behavior. One professor thought the students were trying to make "brownie points." Another pointed out, "I think you come to a teacher with a sob story for either a legitimate or illegitimate reason" (underline ours). Many reported trying to discourage students from relating personal problems, as in the following examples:

> "I say I have to do some other things, which is not a lie. If

> they're not talking about something of real substance that relates to the course...I'll just say, 'I have other things to do and you'll have to excuse me'." (Male--Full--Humanities)
>
> "If they begin to talk about personal problems, I tell them that I am not trained to deal with those kinds of problems, I'm not comfortable dealing with that...I make it clear in the course outline that...I won't do it." (Male--Associate--Social Sciences)

On the other hand, the women professors' attitude was that they should listen when students brought up their personal problems, even if this was time consuming or occasionally inappropriate. Women were likely to point out that students' academic performance could be affected by their personal lives, and that students deserved to be heard before deciding whether or not a problem was a legitimate topic for discussion. One woman related the following story in full:

> "Last quarter I had made it very clear to the students that a quiz or a test missed was a zero. There were no make-ups. (One student) was giving this course everything and missed one of the midterms. It turned out that her sister's boyfriend had attacked her mother and she had called the emergency squad, the police came, just like something from a soap opera. But those things happen in the lives of our students and it makes quite a difference in how they perform academically. I don't know how you can say you won't listen to those things." (Associate--Natural Sciences)

However, the women professors did not report becoming highly involved in their students' personal problems and many clearly stated that they did not counsel more seriously disturbed students. In the words of one professor, "I have developed a policy. I listen to find out the extent of the problem and what role I could play in it" (Associate--Humanities). Another commented, "Sometimes I can't give them any advice and sometimes I can" (Full--Home Economics).

To summarize, both men and women professors, regardless of rank or department, reported that students discussed personal problems in their offices. Men were more likely to be suspicious of this behavior and reported strategies they used to avoid this situation. Women, however, tended to view listening to personal problems as a teacher's responsibility, since these problems could affect academic performance. However, they retained a personal distance from the problems, and if necessary, referred the student to a professional counselor.

Male and female professors had different perceptions of personalizing in general. Women are more likely than men to share examples from their own lives in the classroom, listen to students' personal problems outside the classroom, and informally chat with them in situations and contexts removed from the classroom.

From these results, it would seem that women have managed the potential role strain of being a "woman"--friendly and nurturant--and a "professor"--distant and authoritative--by reducing the professorial distance in the classroom itself, in their offices and in unscheduled informal interactions with students. Men, on the other hand, see themselves as personalizing in the classroom by talking about their academic career and chatting about course work and students career plans, but they avoid the greater personalizing inherent in revealing personal things about themselves or listening to their students' personal problems.

Whether differences in perceptions and attitudes are consistent with the actual classroom behavior of men and women faculty we address next.

PROFESSORS' CLASSROOM PERSONALIZING BEHAVIORS

Male and female professors describe different amounts and kinds of personalizing in their classrooms, as we have seen. Women, according to their accounts, are more likely to share personal experiences in the classroom and to talk about the students' lives. We now turn to sex differences in actual personalizing behavior that appeared in our observational data.

These data permit us to look at a greater range of personalizing strategies in the classroom than the interview material disclosed. Specific behaviors from the observations which we have used as indicators of personalizing in the classroom are the following: (1) acknowledgements of student contributions involving personal communication (e.g., calling a student by name) or expression of gratitude on the part of the professor (e.g., "Thank you for your insight," "I appreciate that, Josh"); (2) empathizing with the students through such verbal statements as "I know you have been trying hard to master this difficult material," (i.e., verbal indicators that the professor is attempting to understand the point of view of the student); (3) personalizations by the professor which are personal statements about the professor's own life, family, experiences, etc., or about the students lives (e.g., "You know how it is when you live in a dorm..."); and (4) students' personal examples about their lives, families, experiences, etc.

Each of these behaviors are ways in which the classroom could become more person-centered and humanistic, and ways in which the role-distance between students and professor could be reduced. Based on our theoretical orientation, we hypothesized that women would be more likely to use these behaviors in order to reduce their role conflict and status inconsistency. Retaining their position of authority (being a professor) yet using these strategies enables them to adhere more fully to traditional feminine role expectations than the professorial role obstensibly permits. These personalizing strategies promote the appearance of concern, nurturance, and consideration, characteristics seen as "feminine." Therefore, women professors who use these strategies are less likely to be resented for being "masculine." The use of these strategies, while conceptually distinct, may in fact be related to authority management techniques discussed in Chapter Five. Initially at least, we treat personalizing behaviors as being distinct, recognizing nonetheless that there is some overlap.

Sex differences. As has been true of our earlier analysis, sex differences are most visible when we consider professors in male and non-male-dominated departments separately. Table 6-A presents the mean differences in personalizing behaviors; Table 6-B gives regression results controlling for rank, class size, and course level. Both sets of findings show that women professors offer more personal statements and receive more personal statements from students in their classrooms than male professors. (Appendix C gives a graphic presentation of distributions in all personalizations for our four subgroups.) Further, men, especially those in non-male-dominated departments, are most likely to use personal statements that refer only to themselves, while a greater proportion of female professors referred to the students' lives. This sex difference is quite consistent with the interview material. Men in the interviews are more likely to view the classroom as a setting where they are center-stage.

Tables 6-A and 6-B about here

Contrary to our prediction (see Table 6-A), men are more likely to verbally empathize with the students, although this is a rare occurrence in male and female classrooms. This greater verbal empathy of males may be explained by two other factors. First, since women are more likely to give non-verbal positive feedback and to permit periods of silence in their classrooms (see Chapter Four), they may show empathy primarily through non-verbal means, e.g., nodding the head, listening intently, giving time for reflection on students' ideas, etc. And second, most of the verbal empathizing observed was in relation to negative experiences--such as the difficulty of the material, the "fairness" of an exam question, the scheduling of exams, etc. Women in the interviews claim they set out very specific class requirements (a finding not reported elsewhere); if they, in fact, do so, they may reduce the potential for "negative empathy" situations to arise in the first place. However, the sex difference is small and not statistically significant when other factors are controlled (Table 6-B).

In summary, then, women are more likely to use strategies that will reduce the role distance between themselves and their students by increasing the person-centeredness of their classrooms. The strategies most often employed by women are the use of material relevant to the students' personal lives, and encouraging the students to discuss their own life experiences in the classroom. Female professors try very hard to make the classroom experience personally relevant to their students. In contrast, the majority of personal statements made by male professors referred to themselves. Based on the interview material, these statements may have involved discussing their own careers and credentials rather than making any personal self-revelations. Thus, female professors seem to make more attempts to personalize their classrooms.

Differences by tenure. As with the other behaviors we have discussed, we were concerned that the observed sex differences may be especially strong for assistant professors, who by virtue of their non-tenured status may experience more status insecurity than other professors. Women assistant professors may be especially likely to utilize personalizing strategies to reduce sex-role performance anxiety. On the other hand, men assistant professors, because of their status anxiety, may adopt traditional female strategies in order to "get the students on their side." As status anxiety disappears, men professors may drop these strategies from their repertoires.

To test these possibilities, we observed mean differences within the four groups in Table 6-A by tenure. We also re-estimated the regression equations in Table 6-B, adding a sex-by-tenure interaction term. We found significant interaction for three behaviors: personal statements related to students, personal statements related to self only, and acknowledgements.

Women at higher ranks engage in more of these personalizing behaviors than untenured women and the differences are greater in the male-dominated departments. Untenured women in male-dominated departments are significantly less likely to personalize than their higher ranked counterparts. Male assistants, on the other hand, are more likely to personalize than their tenured male colleagues.

These results may be explained as the result of status anxiety, although in a way more complex than we initially thought. Untenured women may feel more insecure in their roles as professors and may "keep a lid on" the extent to which they personalize in the classroom. Interview material (not reported elsewhere) for example, indicates that female professors believed they had to "sit on" certain aspects of their "femininity" to prove themselves "competent," and that those personality constraints were lifted only after tenrure was secured. Once tenured they stated they felt more able to re-integrate their "personhood," to stop being "this asexual creature." That is, tenured women freed of intense status anxiety may simply be more able than non-tenured women to follow their own personal predilections, including socialized sex-role preferences for establishing intimate and person-centered climates.

On the other hand, if the interview materials are correct, then the greater personalizing behavior of the assistant males is probably behavior which emphasizes their career accomplishments. Bringing their credentials to class may be a technique they use to increase their sense of worth, and decrease their status anxiety, albeit that they view it as increasing the human-centeredness of their classrooms. Once tenured, they, like their tenured female colleagues, may feel freer to return to personal and sex-role predilections, thereby reducing the amount of behavior related to attempting to humanize the classroom. Some evidence exists in the interviews that male full professors, especially, are disenchanted with students and teaching, and place priority on investing themselves instrumentally in their research.

PERSONALIZING AND STUDENT EVALUATIONS

Students were asked to evaluate their professor, the reader will recall, along two dimensions: likeability and competency (see Chapter Two). We hypothesized that personalizing behaviors would increase the likeability scores for professors but decrease their competency scores.

Table 6-C presents the correlations between the composite likeability and competency scores and personalizing behaviors for the four categories of professors. We found that personalizing has little impact on student evaluations. For women in male-dominated departments, there are no significant associations. Whatever personalizing behaviors these women use--or do not use--there is no effect on students' evaluations of their teaching competency or their likeability.

Table 6-C about here

Use of personal acknowledgements increases competency and likeability scores for men in male-dominated departments and for women in non-male-dominated departments. However, men in non-male-dominated departments who frequently give personal statements about themselves (not relevant to the students' lives) are judged less competent than those who eschew that behavior. When male professors talk about themselves, it may be viewed as "false pride." As discussed earlier, if the professor shares credentials in order to reduce his status anxiety, the students may, in fact, sense his sub rosa message--that maybe he is not really competent--and evaluate him as he evaluates himself. Another possible explanation is that they view his behavior as "time wasting" or "inappropriate." For example, those male professors we interviewed who discussed in class how their non-traditionally structured personal lives (e.g., their baby-sitting, cooking, and cleaning activities) reported very negative, almost combative, reactions from their students. They felt students believed "professors should not be androgynous."

When the correlations with the individual likeability and competency items are examined (see Table 6-D), there are no significant correlations with any of the evaluation items and the personalizing behaviors of women in male-dominated departments. For women in non-male-dominated departments, their use of personal acknowledgements has a significant effect on students' evaluations. The more women in these departments personally acknowledge students' input (e.g., "Thank you," "I appreciate your help, Connie"), the more students judge them as communicating well, stimulating, logical in presentation, responsive to students, non-authoritarian, considerate, one of the best teachers ever, as well as one of best female teachers ever, and a person worth knowing better informally.

Table 6-D about here

Acknowledging behavior is a combination of genteel politeness and a recognition of students as individual persons. That is, it is a strategy which incorporates two sex-role expectations for females: that they be polite and that they nurture the individual. It seems ironic that such a simple behavior, personally acknowledging students, should reap such extensive rewards in terms of students' evaluations.

Men who use personal acknowledgements are not evaluated as strongly across so many items. For those in male-dominated departments, acknowledgements are associated with being judged responsive to students, one of the best teachers ever, as well as one of the best male teachers, and a person who the student would like to know better informally. Males in non-male-dominated departments who personally acknowledge students are only considered responsive and non-authoritarian.

It would seem, then, that personal acknowledgements give the male professor some mileage with the students, but not near the marathon consequences it has for women in non-male-dominated departments.

Males do, however, get some interesting effects from the use of personal statements in the classroom. Men in male-dominated departments who make personal statements relevant to students' lives are viewed as someone the students would like to know better informally, whereas men in non-male-dominated departments who do this are judged ill-prepared, lacking thorough knowledge of subject matter, a poor communicator, and not stimulating, i.e., if he talks only about himself, he is only considered ill-prepared for class. Moreover, if men in male-dominated departments allow students to make personal statements, they are judged inconsiderate of students; men in male-dominated departments who do this are also judged inconsiderate, and non-responsive as well.

These findings suggest that men in non-male-dominated departments are negatively evaluated by their students if they engage in "non-masculine" stereotyped behaviors. Consistent in general with theory and research in the sociology of gender and with our hypotheses, males are more severely sanctioned for adopting "sex-inappropriate" behaviors than women are. This sanctioning may be especially strong where the sex boundaries are less clear, as would be the case for men in departments with a high proportion of women. Students may in fact have different expectations for male professors than for female professors. Their expectations may be that the male perform his role instrumentally, that he "get on with the facts." If he fails to do so, he may be judged "too feminine." Allowing students to share personal information and sharing information about himself may be viewed as "wasting time" or "covering up" his lack of knowledge/preparation and so on. It is quite possible, based on the interview material, that the professors interested in getting students to talk about themselves allow their students to "run-on," to use a disproportionate amount of class time (from the perspective of other students). Students in men's classes may not want to listen to the "opinions" of their peers, rather, they may want to hear the "truth" from their professors. That is, it is quite possible that student lack of respect for other students lowers their estimation of professors who do respect students as persons with experiences worthy of class time. Chapter Five presented similar results where men in non-male-dominated departments who used the female-typed strategy of generating student participation were judged to be less competent. Whatever the explanation, it is sadly ironic that the very male professors who are concerned about reducing their role distance and who attempt to do so by personalizing in the classroom, should elicit any negative evaluations.

To more adequately estimate the impact of these behaviors on student evaluations, we estimated several regression equations that included these behaviors and controls for class size, male-domination of the department, and the proportion of the students who were female. As in similar analyses, structural variables had more effect on student evaluations; they were especially important for men, showing the same patterns of effects as found in Chapters Four and Five. Class size decreased both likeability and competency evaluations; proportion female increased competency ratings for men, while male domination decreased likeability ratings.

These results (Table 6-E) also suggests that, in general, these behaviors have very little impact on student evaluations. A significant effect of acknowledgements on likeability ratings does appear for women. Also, personal statements relevant to students increased the competency ratings of women, while student personalizations decreased these ratings.

Table 6-E about here

These results suggest that personalizing in the classroom does not greatly affect student evaluations of women. When it does have an effect (as with acknowledgements), it tends to increase evaluations, especially for women. These behavior patterns, which are typically female in that they tend to be utilized more often by women, may simply be taken for granted in women--and resented, when they do occur, in men. We will discuss this finding more fully in Chapter Seven in the context of all our findings.

Personalizing as a Conditioning Factor

To exhaustively explore the possible effects these personalizing behaviors may have on student evaluations, we considered the possibility that personalizing behaviors served as conditioning factors for the effects of good teaching and authority management. That is, we wished to consider the possibility that while these behaviors had few direct effects on student evaluations, their absence may increase the negative impact of authoritarian management techniques or "poor" teaching (failure to adhere to the good teaching model). To test this possibility, we created interaction terms between personalizing/acknowledgement and important good teaching and authority management behaviors and added them to the equations predicting student evaluations.

For men, when personalizing behaviors are not used, "good teaching" behaviors have a stronger effect on student evaluations. That is, in the absence of personalization, using "good teaching" behaviors have more impact on student evaluations. "Poor teaching" (non-adherence to the good teaching model--see Chapter Four) combined with little personalization brings lower competency and likeability evaluations upon the male professor. "Good teaching" tempered with personalization, improves the male professors' evaluations. But for those who do personalize, good teaching has no impact on student reactions.

For women, the absence of personalizing behaviors has consequences for the effect of their authority management behaviors, especially their evaluative authority (particularly negative feedback), on student evaluations. If they score high on evaluative authority and do not temper that behavior with personalizing, their competency and likeability scores decrease, especially their likeability scores. When a woman personalizes, however, there is no such effect; that is, her student evaluation scores do not vary with her use of evaluative authority.

This conditioning effect of personalizing suggests an important sex difference in the teaching situation. If men teach poorly, but personalize in the classroom, their student evaluations will not be affected (although few sanctions accrued to either men _or_ women because of "poor" teaching). Women, on the other hand, may be sanctioned for not personalizing; if they then try to establish their legitimacy in the classroom in the absence of personalizations, they will be even more strongly resented.

SUMMARY

These findings demonstrate that men and women professors are quite different in their attempts to personalize their classroom atmospheres. Neither sex showed a greater tendency toward self-revelations in the classroom, though our interview data suggest that the _content_ of women's revelations may have been more personal. The greatest sex difference concerned women's attempts to relate to their students' personal situations. In our interview data, female professors reported more of these attempts, and our observational data show women actually making these attempts. Female professors more often used examples relevant to the students' personal lives and encouraged students to relate their own experiences to the class. In essence, female professors seemed to focus more on the student as a total person, incorporating student experiences into classroom presentations, listening to students' problems in their offices, chatting with students outside the classroom. While these behaviors might simply make the situation more comfortable for women because of prior sex-role conditioning, they may serve another pragmatic function. Our analyses indicate that personalizing enables women to establish their authority in the classroom without causing student resentment. Hence, personalizing behaviors may be especially crucial for women professors. Men, on the other hand, may suffer by using these methods; men in non-male-dominated departments were seen as less competent if they did (though they were also liked more). Hence, these men experience the double-bind we thought would only be true for women.

Table 6-A

Means and Standard Deviations for Personalizing Behaviors by Sex and Male-Domination of Department

	Men--Male-Dominated Dept.		Women--Male-Dominated Dept.		Men--Non-Male-Dominated Dept.		Women--Non-Male-Dominated Dept.	
	Mean	S.S.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Professor Personalizations	.010	.021	.025	.090	.023	.056	.026	.047
Professor Personalizations Related to Self Only	.005	.012	.013	.053	.020	.054	.017	.036
Professor Personalizations Relevant to Students Only	.005	.018	.012	.038	.003	.017	.009	.025
Professor Acknowledging Students	.007	.009	.014	.024	.020	.029	.019	.017
Empathy with Students	.002	.010	.001	.001	.002	.004	.001	.002
Student Personalizations	.000	.001	.019	.103	.001	.004	.004	.014

Table 6-B

Regressions Predicting Personalizing Behaviors

	Empathy With Students		Acknowledgements		Professor Personalizations		Professor Personalizations Related to Self Only		Professor Personalizations Related to Students Only		Student Personalizations	
	b	Beta	b	Beta	b	Beta	b	Beta	b	Beta	b	Beta
Sex of Professor	-.001	(-.058)	.003	(.061)	.013	(.122)*	.002	(.035)	.010	(.213)*	.017	(.186)*
Male-Dominated Department	.0001	(.005)	-.009	(-.207)*	-.008	(-.074)	-.010	(-.131)*	.002	(.050)	.007	(.076)
Rank of Professor	.001	(.111)	-.001	(-.025)	.004	(.067)	.001	(.020)	.003	(.117)	.008	(.147)
Class Size	-.001	(-.099)	-.002	(-.086)	.001	(.168)*	.007	(.140)*	.004	(.143)	.001	(.013)
Course Level	-.000	(-.151)*	.001	(.097)	.003	(.109)	.001	(.085)	.001	(.102)	.002	(.091)
Constant	.003		.021		-.028		-.006		-.022		-.036	
R^2	.039		.086		.043		.035		.054		.044	

Table 6-C

Zero-Order Correlations Between Student Evaluation Scales and Personalizing Behaviors by Sex and Male-Domination of Department

	Men--Male-Dominated Dept.		Women--Male-Dominated Dept.		Men--Non-Male Dominated Dept.		Women--Non-Male Dominated Dept.	
	Comp.	Like.	Comp.	Like.	Comp.	Like.	Comp.	Like.
Acknowledgements	.205*	.257*	-.021	.166	.101	.075	.277*	.353*
Empathy with Students	.050	.057	.057	.076	-.077	-.059	.037	-.040
Personalizations	.079	.124	-.004	.055	-.286*	-.244	.185	.200
Self Personalizations	-.043	.030	-.015	.058	-.209	-.178	.089	.111
Personalizations Related to Students Only	.125	.127	.011	.048	-.292*	-.249	.217	.213
Student Personalizations	-.090	-.077	-.049	.050	-.088	-.120	.113	.182

*Coefficients significant at .05 level.

Table 6-D

Zero-Order Correlation Between Personalizing Behaviors and Student Evaluation Items by Sex and Male-Domination of Department

	Competency Items							Likeability Items			
	Teacher Prepared	Teacher Has Thorough Knowledge	Teacher Communcates Well	Teacher Is Stimulating	One of Best Teachers at Univ.	Teacher Presentations are Logical	Best Male/Fem Teacher Have Had	Teacher Responsive to Students	Teacher Considerate of Students	Want to Know Teacher Informally	Teacher Too Authortarian
Men in Male-Dom. Depts.											
Acknowledgements	-.061	.157	.169	.154	.265*	.085	.256*	.250*	.143	.232*	-.213
Empathy	-.004	-.011	.027	.031	.056	.011	.105	.123	.023	.047	-.070
Personalizations	.017	.090	.071	.069	.075	-.003	.087	.187	.109	.219*	-.186
Self Personalizations	-.135	.066	-.083	-.039	.005	-.029	-.007	.055	-.009	.063	.032
Personalizations Related to Students Only	.113	.063	.142	.110	.086	.158	.109	.186	.136	.219*	-.244*
Student Personalizations	-.002	-.013	-.022	-.105	-.063	-.013	-.090	-.102	-.221*	-.113	.197
Women in Male-Dom. Depts.											
Acknowledgements	-.099	.054	-.064	.097	.005	-.238	.085	.139	.096	.239	.028
Empathy	.111	.158	.074	.040	.068	.018	-.063	.054	.029	.136	.012
Personalizations	.008	.138	-.062	.047	-.006	-.210	.089	.034	-.049	.175	.157
Self Personalizations	-.004	.117	-.068	.037	-.020	-.214	.086	.033	-.043	.181	.178
Personalizations Related to Students Only	.025	.160	-.050	.058	.014	-.194	.090	.035	.055	.159	.119
Student Personalizations	-.044	.091	-.099	.009	-.050	-.245	.052	.032	-.052	.164	.182
Men in Non-Male-Dom. Depts.											
Acknowledgements	-.014	-.026	.010	.190	.103	.016	.071	.330*	.222	.072	-.357*
Empathy	-.037	.138	-.048	.014	-.086	-.128	.083	-.136	-.082	-.078	.203
Personalizations	-.357*	-.285*	-.313*	-.282*	-.227	-.249	-.221	-.188	-.162	-.182	.045
Self Personalizations	-.294*	-.238	-.239	-.214	-.156	-.172	-.163	-.129	-.108	-.134	-.002
Personalizations Related to Students Only	-.256*	-.194	-.288*	-.260*	-.280*	-.288*	-.220	-.220*	-.200	-.183	.160
Student Personalizations	.054	.056	.003	-.046	-.069	.109	-.119	-.372*	-.439*	-.238	.330
Women in Non-Male-Dom. Depts.											
Acknowledgements	.127	.001	.285*	.300*	.298*	.259*	.333*	.376*	.357*	.274*	-.283*
Empathy	-.002	.082	.081	-.004	.027	-.006	.069	-.060	-.058	.001	.119
Personalizations	.144	.131	.158	.239	.177	.200	.128	.321	.246	.018	-.139
Self Personalizations	.090	.050	.054	.140	.080	.121	.037	.247	.156	-.070	.011
Personalizations Related to Students Only	.138	.173	.215	.244	.215	.197	.186	.240	.233	.136	-.278*
Student Personalizations	.049	-.124	.112	.155	.147	.078	.155	.228	.165	.127	-.326

Table 6-E

Regressions Predicting Student Evaluations
with Personalizing Behaviors
by Sex of Professor

	Men		Women	
	Competency	Likeability	Competency	Likeability
Class Size	-1.219 (-.374)*	-.435 (-.197)*	-.940 (-.185)*	-.316 (-.167)
Acknowledgements	8.635 (.054)	10.102 (.092)	18.093 (.099)	16.890 (.236)*
Proportion Female	.003 (.193)*	-.002 (-.156)	.006 (.038)	-.0001(--.003)
Male Domination	.152 (.023)	-.941 (-.208)*	.480 (.064)	-.121 (-.044)
Constant	12.809	6.555	12.562	5.365
R^2	.178	.108	.048	.098
Class Size	-12.617 (-.387)*	-.477 (-.216)*	-1.192 (-.234)*	-.412 (-.218)*
Personalizations	-2.565 (-.031)	-1.613 (-.029)	21.617 (.400)*	6.091 (.300)
Student Personalizations	-13.929 (-.102)	-9.046 (-.098)	-20.518 (-.378)*	-4.422 (-.220)
Proportion Female	.003 (.189)*	-.002 (-.156)	-.006 (-.040)	.001 (.022)
Male Domination	-.006 (-.009)	-1.128 (-.250)*	.751 (.101)	-.082 (-.030)
Constant	12.367	6.162	12.159	5.090
R^2	.187	.111	.079	.070
Class Size	-1.257 (-.386)*	-.471 (-.213)*	-1.063 (-.209)*	-.378 (-.200)*
Self Personalizations	-4.033 (-.044)	-3.051 (-.049)	13.571 (.161)	4.196 (.134)
Student Personalizations	-13.731 (-.101)	-8.862 (-.096)	-8.975 (-.165)	-1.361 (-.068)
Proportion Female	.003 (.188)*	-.002 (-.159)	.001 (.061)	.002 (.038)
Male Domination	-.009 (-.016)	-1.159 (-.267)*	.067 (.090)	-.100 (-.036)
Constant	12.341	-6.137	12.387	5.156
R^2	.188	.113	.049	.054
Class Size	-1.246 (-.383)*	-.462 (-.210)*	-.985 (-.193)*	-.368 (-.195)*
Empathy	.235 (.0006)	8.323 (.031)	6.052 (.030)	-9.292 (-.012)
Proportion Female	.003 (.196)*	-.001 (-.151)	.001 (.060)	.002 (.046)
Male Domination	.006 (.009)	-1.060 (-.235)*	.506 (.068)	-.132 (-.048)
Constant	12.605	6.331	12.437	5.134
R^2	.176	.102	.039	.046
Class Size	-1.289 (-.400)*	-.497 (-.225)*	-1.188 (-.233)*	-.408 (-.216)*
Personalizations Related to Students	3.581 (.019)	.431 (.034)	3.933 (.330)*	1.040 (.235)
Student Personalizations	14.160 (.104)	-9.169 (-.099)	-1.55 (-.287)*	-2.789 (-.138)
Proportion Female	.274 (.195)*	-.144 (-.151)	-.004 (-.027)	.009 (.016)
Male Domination	-.017 (-.003)	-1.101 (-.244)*	-.504 (-.068)	-.151 (-.055)
Constant	12.416	6.194	11.883	5.021
R^2	.187	.112	.084	.069

CHAPTER SEVEN

CONCLUSIONS

This study began with the thesis that sex differences in teaching style would exist because of the role strain and status inconsistency experienced by women professors. Expectations that women are warm, nurturant, supportive (Sherriffs and Farrett, 1953; McKee, 1959; Lewis, 1972) conflict with the expectations that university professors are directive, assertive, knowledgeable. Prestige attributions for professors are high, whereas the status female has less esteem. Women professors must somehow manage these conflicts in a way that does not alienate others. Therefore, they may assert their authority, but only indirectly, avoiding harsh and "aggressive" postures. Or they may attempt to personalize their teaching situation by incorporating their personal experiences and those of their students into the classroom interaction. These strategies permit greater adherence to traditional female role expectations while playing the highly prestigious role of "university professor." This is a balancing act men should not have to master since most traditional male role requirements mesh neatly with the "professor" role.

Further, women may have a more difficult time establishing their *competency* because women are often *assumed* to be less competent than men (Hartley, 1959; McKee, 1959, Pheterson, *et al.*, 1971). Women who behave in "female typed," non-assertive ways, are especially thought to be less competent even when this is not, in fact, the case (Eskilson and Wiley, 1976; Meeker and Weitzel-O'Neill, 1976). Therefore, women professors are faced with the necessity of *underplaying* their authority and *at the same time* unequivocably demonstrating their competency. The difficulty lies deeper than this, however.

Not only must they perform two seemingly contradictory behaviors at the same time (demonstrating competency, underplaying authority), but one type of behavior may actually interfere with the other. Consequently, women who successfully underplay their authority may be judged as non-legitimate, incompetent holders of their position.

In sum, women may experience a chain of double-binds. First, since they are likely to be responded to in terms of their lesser status, female, they will not be viewed as legitimate holders of the position university professor. To be viewed as legitimate may require them to adopt "masculine" sex-typed styles of interaction, which in turn may lead to resentment and punishment (cf. Kanter, 1977). To attenuate those interactions, they may have to increase their "feminine" sex-typed behaviors. However, by doing so, they may be judged incompetent, and once again, not legitimate in the role of university professor.

Men professors, on the other hand, should not experience these conflicts since the status, professor, is consistent with the status, male. Rather, they may experience a different kind of difficulty, that of overcoming the role distance between themselves and students. Thus, we would expect them to act their role differently than women.

Specific hypotheses. Based on these considerations, we expected certain behaviors to be typical of female professors. First, we expected women to anticipate and avoid possible student resentment by "feminizing" their teaching approach. We expected women professors to reduce their appearance of authority in the classroom (by giving subject matter authority to their students) and to personalize their classroom interactions (by creating classroom environments that are warm, caring, human). Second, we expected women to refrain from using harsh control techniques.

Further, we expected women professors to simultaneously act to assert their legitimacy in the classroom. We expected them to demonstrate competency by adhering somewhat more to the good teaching model (particularly by involving students in the classroom) and by more often asserting their evaluative authority (making judgments about the correctness of student responses.

Originally, we thought women would adopt these strategies primarily because of students' influence, namely, that students would strongly sanction (resent) women who did not adopt these strategies. We measured student reactions along two dimensions--competency and likeability ratings--and expected students (1) to like women who underplayed their authority but to view them as less competent, and (2) to judge as competent those women who asserted their legitimacy. We also hypothesized students would like women who asserted their legitimacy in ways that involved interacting with students (especially through use of the participatory teaching model).

IMPLICATIONS OF FINDINGS

Because we have taken a broad theoretical approach to our topic, our findings have relevance for broader theoretical issues as well as for the more specific setting we have studied. First, they speak to the general issue of gender differences in our society. We have found differences between adult men and women--in attitudes, perceptions, and behavior--that are quite clearly related to prior gender socialization. Second, we have perhaps identified a mechanism that perpetuates these differences beyond childhood--role conflict/ status inconsistency, and the reactions of significant others. That is, many factors play a part in this perpetuating gender differences--prior socialization, current roles and their requirements, reactions of others, the interplay of all three. Our argument is, essentially, that women's typical attempts to manage role and status incongruities may, in fact, perpetuate traditional sex roles. Our data permit us to make some statement about the most influential source of the conflict for women: to what extent are traditional role behaviors really insisted upon by those around them, and to what exent do women choose to act in traditional ways? In all likelihood both factors operate, but our data permit us to weigh their relative strength.

Finally, these findings also contribute to our general understanding of higher education, especially of classroom dynamics. Little prior work has been done in this area, especially of the magnitude attempted here. Our findings speak to the issue with which we began this report--that of women's success chances in such male-dominated institutions. Since adequate teaching is at least a minimal requirement for tenure, sex-related behaviors that lower evaluations may be counter-productive for women. To the extent that women must manage anxiety-producing cross-pressures that men do not encounter, their chances for success in such institutions may be severely mitigated. It is to these issues that we now turn.

Sex Differences in Teaching Styles

We found fairly clear and consistent sex differences in three kinds of teaching behaviors: those involving (1) good teaching, (2) authority management; and (3) personalizing in the classroom. In all three areas, women differed from men in ways consistent with our hypotheses, although the two sexes were more similar in some ways than we had originally expected.

Good teaching. This similarity was most apparent in good teaching behaviors. Here we found equal levels of commitment to teaching in general, and we also found similarities in specific teaching behaviors. Both sexes were likely to structure their presentations and to spend the majority of classroom time presenting lecture material with a fair amount of time given to student participation. Our interviews, however, revealed a sex difference in attitudes toward students that was also evident in the observational data; women professors were more likely to relate to students as full partners in the learning process. They more often believed that student participation was an essential element of the learning process, and, consequently, they involved students quite extensively in classroom interaction. Men professors, on the other hand, more often believed they were the primary (only) source of learning in the classroom, and that although students' participation fulfilled a motivational function, their participation was not substantively important. As a result, male professors actually used the participatory teaching model much more sparingly than female professors. Their interaction with students tended to be minimal; students were asked for the "correct" answer, asked if they had "any questions," and their questions were answered. Male professors were less likely than women to go beyond these steps to involve students in the learning process. Women professors, on the other hand, provided students with a broader range of learning experiences through their classroom participation.

Authority management. Women involved students in the learning process at yet another level; they distributed the "subject matter" authority role to the students--measured by the amount of classroom time students participated and the assertiveness (indepdendence) of student contributions. This tendency among women professors may have two sources. First, our interview material indicated that women were more affectively tied to their students and were more concerned that their students achieve intellectual independence. Second, women professors may choose to avoid potential student resentment by distributing some of their authority to them. Women professors do not, however, "capitulate" to students, simply relinquishing all classroom authority. While they are yielding "subject-matter" authority, they are also asserting their "evaluative authority"--their right to judge the correctness or incorrectness of student input. Hence, women professors are simultaneously increasing and decreasing their appearance of authority in the classroom in their interactions with students. Both interview and observational data show, however, that women are quite hesitant to use harsh, direct, confrontive means of establishing their authority. Instead, they use much less confrontational and less direct methods to handle challenges to their authority.

Personalizing in the classroom. Women professors went further than merely refraining from harsh control techniques to establish a warm classroom atmosphere. They made more positive attempts to relate to their students in a personal way. Our interview data suggest that they talked more about personal lives and problems with students--both inside and outside the classroom. When men talked about themselves they tended to discuss their careers and credentials rather than more personal topics. Also, male professors more often avoided counselling students about their personal problems.

The observational data also show women's tendency for more personalizing in the classroom. More classroom time was spent sharing personal experiences, especially those of the students, and women professors engaged in more behaviors showing concern and respect for students, such as personally and politely acknowledging student contributions.

In sum, these findings are consistent with our original hypotheses and with known gender differences in society generally. Women professors seemed to take a more person-oriented, student-centered approach to teaching. They were more concerned with the emotional atmosphere in the classroom, with students as total persons, and with involving students extensively in the learning process. Their orientation was more expressive and less instrumental than the men's. This difference in orientation was clearly evident in both the interview and observational data. This is not to imply that the women were not concerned with the instrumental aspects of their role--adequately conveying the material, they were. And they used the same strategies as the males to structure their presentations, to correct student mistakes, and to check student understanding. In some cases they were actually more likely to do so, perhaps partially in an attempt to establish their competency. What these women were doing was adding person-oriented expressive behaviors to their teaching repertoire.

These characteristic teaching strategies of women seem to arise from the role conflict they experience. Many women professors, especially assistants, expressed concern with "hiding" their femininity lest they be viewed "weak" or "incompetent." At the same time, they felt very concerned with students as total persons and wanted to relate to them as such. Hence, we see women using some strategies that increase their appearance of authority and others that decrease their appearance of authority.

Women professors, probably partly due to prior socialization, and partly due to perceived role pressures and demands of students to conform to more traditional sex-typed behavior, may feel compelled to adopt an expressive approach to teaching. However, they may also perceive that they will be judged incompetent if they do so. Consequently, a great deal of role conflict and status anxiety is generated. Their resolution is to add onto their teaching those behaviors which both establish their authority and "humanize" it.

Is this strategy "successful"? Young women professors who use it (and young men professors, to some extent) continue to experience a great deal of conflict. Higher ranked women professors feel less conflict, but they have largely given up the "student-centered" approach to teaching. They now take a more instrumental approach.

Another measure of "success" is the extent to which students are favorably impressed. Student reactions are, according to the interviews, an important source of an untenured woman professor's sense of worth and competence, and they are, after all, somewhat influential in determining the woman's success chances in the university. It is to this issue that we now turn.

Student Evaluation and Teaching

Originally, we thought these teaching strategies would have quite strong effects on student evaluations, especially for women. We expected students to "like" professors who reduced their appearance of authority, personalized, and adhered to the good teaching model, and dislike professors who used harsh control techniques. We also expected some of these strategies--adherence to the good teaching model and authority assertion--to increase students' assessments of their professors' competency, while others--reduction of authority and personalizing--might lower competency assessments.

Effects were actually quite weak and scattered, but did lend some support to these expectations. The evaluation of men and women were affected quite differently by these behaviors, so they are discussed separately by sex. Students liked women who used the participatory teaching model, especially when they gave subject-matter authority to the students. Students also liked women who acknowledged student contributions and refrained from using harsh control techniques. Hence, women were reinforced by students for using "female-typed" teaching strategies. Few behaviors affected students' views of women's competency, however. Women who gave partial positive feedback were seen as more competent, but other authority legitimizing and good teaching behaviors did not have the expected effect of increasing women's competency ratings. However, women who encouraged student participation were seen as less competent. Hence, women do experience a double-bind; they are liked better if they underplay their authority, yet they are seen as being less competent for doing so. Women are also resented when they assert their authority unless they "cool out" the students by personalizing their classroom interactions; further, they are liked less and labelled "too authoritarian" when they do so.

Teaching behaviors have quite different effects for men. In the first place, they have much less impact on their students' reactions; men's evaluations are more strongly affected by structural features (e.g., class size, proportion of female students) than are women's This finding directly contradicts previous research (Wikler, 1978) which suggests that student reactions to women are more strongly affected by structural features such as class size.

Men are likely to be judged competent and likeable regardless of what they do. Students apparently have strong preconceived notions that they call upon in making their evaluations that actual classroom behaviors do not alter. Some tendency did appear for men who acknowledged students or otherwise interacted with them to be judged more competent and more likeable. However, a stronger tendency appeared for men in non-male-dominated departments to be judged less competent if they adopted "female-typed" behaviors. The more student participation these men elicite, and the more they personalized in the classroom, the less competent they were judged (though they were actually liked more).

Thus, ironically, men in non-male-dominated departments seem to experience the double-bind we hypothesized for women. Students may resent men who behave in female-typed ways in female-typed disciplines. Our interview material suggests that this might be so; several male professors complained that students expected them to behave in "macho" ways. However, men seem to "give up" these behaviors that students "resent" (evidenced by competency ratings and the interview material) long before women. Associate and full ranked males were less likely to elicit student participation and to personalize. Women, however, persisted in these strategies until they were full professors. Consequently, women professors experience the role strain endemic in this double-bind for a much longer portion of their careers. In this sense, and because student responses are more salient to the self-image of the woman professor, then, women have a disadvantage in managing their careers.

The Importance of Student Evaluations

We should not overstate the importance of student reactions as possible checks on professors' teaching styles. At least as measured by student evalulations, students seem indifferent to the various strategies. The number of significant correlations we obtained, though interesting in their patterns, could have easily been obtained by chance, given the large number we originally estimated. These findings suggest that students are not nearly as sensitive to sex-typed teaching behaviors as our interview respondents tended to think they are. It seems that professors have greater flexibility in the classroom than they realize. Perhaps sex-typed behaviors arise more from prior socialization than from present situational constraints. These results suggest that this might be so. At any rate, these teaching styles do not seem to be strong determinants of student evaluations. In general, women are perceived to be as competent as men, regardless of their teaching strategies. One could agree, of course, that women should be seen as more competent, given their greater use of experiential and expressive modes of teaching. However, as Thorne (1979) argues, women may be seen as competent when they have legitimate "proof" (such as a Ph.D.) of their competency.

Lest the foregoing in any way suggest that the male teaching-style is the preferable one and that women should feel free to adopt it, we must say that the opposite conclusion is equally valid. Women, and men, too, may choose to implement female teaching styles--with greater emphasis on the nurturing of student intellectual independence and the creation of classroom environments which are humane. The teaching style selected apparently will not have a major impact on students' evaluations. Another way of stating this is that although students, by and large, evaluate male and female professors highly, regardless of their teaching styles, women may want to choose to continue teaching as they do, and even to "educate" the male professors to their style. The impact of this may go well beyond the integration of divergent role expectations for the individual. It may have an impact on climate of the university by creating classrooms that are normatively humane, open, and student-centered.

Some methodological problems exist in this study that may have artificially attenuated the correlations between teaching behaviors and student evaluations. First, the distribution of both types of variables are so badly skewed, the linearity assumptions required for Pearson correlations and regression may not be met in these data. If so, these coefficients would be small even if the actual relationship were strong. However, we attempted (unreported) alternative approaches that did not involve linearity assumptions, and the relationships remained weak.

A second difficulty involves our measure of teaching behaviors. Since we do not have repeated observations, we may not have adequately represented normal classroom behaviors in all cases. If so, more reliable measures of teaching styles might be more strongly related to student evaluations. Future research must explore this and other possibilities, the topic to which we now turn.

Implications for Future Research

Our findings have several implications for future research. First, they demonstrate the viability of symbolic interaction role theory as a framework for studying gender differences. Many processes identified by this theory--role strain, sanctioning by others, role negotiating--are helpful in understanding how the experiences of men and women differ. It has been argued in the past that role theory is conservative and diminishes the impact of gender. Our study indicates that this is not necessarily so. Further, this approach may eventually link gender research into the main body of social psychology--a goal some feminists hope to attain.

These results also demonstrate the tremendous advantage of a triangulated approach to research. We were constantly struck by the extent to which the findings from our two methodologies informed and complemented one another. Our interview data provided depth and understanding to the interpretations we could give to all of our findings; our observational data, in turn, provided hard evidence about actual behaviors and other trends our respondents talked about in the interviews. Using both approaches provided us with insights and knowledge that either alone could not.

We suggest future studies might improve upon or expand the design of the present study. One might conduct a similar study with repeated observations using fewer (only the important) variables. To generalize to college teaching in general, information must also be gathered at smaller universities and liberal arts colleges in regions other than the Midwest. Patterns may differ in situations where attitudes toward women are more or less traditional than in the setting we studied.

Looking across institutions would also enable us to include more unusual women--specifically women who are full professors and/or teach in male-dominated departments. We know relatively little about these women because there were so few in this university.

We also suggest that different types of student reactions be measured. In particular, we might be interested in knowing if teaching style differences affect what students learn--or if they affect student perceptions of what they learn. Prior research, however, suggests that teaching styles have little to do with teacher effectiveness or how much students actually learn (Getzels and Guba, 1954; Meyers and Rowan, 1975).

In addition to these issues, there are several serendipitous findings that should be explored further. Men in non-male-dominated departments unexpectedly experienced the double-bind we thought would only be true for women. What, exactly, is happening to these men? Also, both men and women divested themselves of the importance of teaching as they increased in rank. What is it about the university structure which leads to this?

In sum, this study provides important insights into the situations of male and female professors in the university setting. Our findings that women experience somewhat more strain in coping with their situation might be applied to gender differences in other situations. Hopefully, these findings will prove helpful in easing the burden of both women and men as they attempt to manage the strain, if only by defining it as a group problem with structural sources. For, to paraphrase C. Wright Mills, only by recognizing that "personal problems" are "social issues" can viable solutions be found.

OSU

The Ohio State University

Department of Sociology
300 Administration Building
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Columbus, Ohio 43210
Phone 614 422-6681

November 18, 1978

Dear Colleague,

We'd like to enlist your cooperation in a study of teaching styles. The study is only descriptive--not evaluative. The information we will gather is non-judgmental, nor will your name or information about your teaching style be made available, even in an indirect manner, to administrators, chairpersons or other university personnel. Through grants from the Graduate School and the National Institute of Education, we will be describing the teaching styles of male and female professors and students' responses to those styles.

You have been selected through random sampling procedures and we seek your cooperation in two matters. First, we ask you to permit a trained observer to code you teaching once only during the winter quarter. The coder will sit in the back of the room and will write the code number that describes what you are doing. If you are lecturing, the coder will write down the code number for "lecturing"; if you are asking a question, the coder will write down the number for that activity. The coder will only record what you are doing, not evaluate it. As a second part of the study, we would administer, at your convenience, a 5-10 minute questionnaire to your class at the end of the quarter (see enclosure).

Throughout the study, your confidentiality will be protected. All data on teaching styles will be aggregated for statistical analysis and no particular individual will be identifiable.

So that we may proceed with the study, we ask you to sign and mail the enclosed consent form. At the beginning of the winter quarter, we will contact you to set up a date when it would be most convenient for you to have a coder in your classroom.

If you have any questions, please contact Dr. Anne Macke (422-1354) or Dr. Laurel Walum (422-6111) in the Sociology Department.

Thank you.

Anne Statham Macke

Anne Statham Macke
Assistant Professor

Laurel R Walum

Laurel Richardson Walum
Professor

Consent Form

☐ I consent to participation in this study.

☐ I do not consent to participation in this study.

☐ I would like more information about this project.
Please call or visit me in my office ___________________.
office phone

______________________________, ____________________.
office building and number office hours

If you consent to participate in this study, please complete and sign the standard human subjects consent form below. Thank you.

I consent to serve as a subject in the research entitled: "Sex-typed teaching styles among university professors and student reactions."

The nature and general purpose of the research procedure have been explained to me. I consent to my being observed for one class period in ___________________________, ___________________ and will permit the
course name course number
administration of a 5-10 minute questionnaire to my class at the end of the quarter. I understand that my identity will not be revealed in any publication, document, computer data storage, or in any other way. Finally, I understand that I am free to withdraw my consent and discontinue participation at any time following the notification of the Project Director.

Signed ___________________________________
Subject

Date ___________________________________

Student Questionnaire

1. Major:
A) Social Sciences
B) Natural Sciences
C) Humanities and Arts
D) Other
E) Undecided

2. GPA
A) 3.5-4.0
B) 3.0-3.4
C) 2.5-2.9
D) 2.0-2.4
3) Below 2.0

3. Grade expected in this course: A) A B) B C) C D) D E) E

4. This course is: A) only a BER requirement for me B) required for my major
C) part of my major but not required D) an elective

5. Sex: A) Female B) Male

6. About how many college courses have you had where the major instructors were women?
A) none
B) 25% or less
C) 25% to 50%
D) 50% to 80%
E) practically all

7. About how many college courses have you had where the teaching assistants instructing were women?
A) none
B) 25% or less
C) 25% to 50%
D) 50% to 80%
E) practically all

8. Sex of Instructor: A) Female B) Male

For each of the following statements blacken the letter which best expresses your opinion on each of the following items:

A	B	C	D	E
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

9. The instructor was well prepared for class.
10. The instructor had a thorough knowledge of the subject.
11. The instructor communicated the subject matter well.
12. The instructor stimulated interest in the course subject.
13. The instructor is one of the best teachers I have known at this university.
14. The instructor presented the material in a logical manner.
15. This instructor was responsive to student input.
16. Sometimes, this instructor seems to be too authoritarian.
17. This instructor was generally very considerate of students.
18. If given the opportunity, I would like to know this instructor more informally.
19. Compared to most other female/male instructors, this one is among the best.
20. In general, I would rather be taught by male than female instructors.

Code # ______________________

Sex ______________________

Department ______________________

Rank ______________________

Sex-Typed Teaching Styles

Years of Teaching ______________________

I am interested in how females and males experience the teaching role in universities. I will be asking some general questions about your attitudes toward teaching and about your experiences with students in classrooms and in your office. I am particularly interested in the special insights and experiences you have had because you are a female (male). Although many of these questions are structured, please feel free to add areas and ideas which I may not be covering.

Attitudes

1. As you know, teaching is but one aspect of the professorial role. How would you characterize your present attitude towards teaching? (e.g., a chore, neutral, pleasurable, etc.)

2. Has your attitude toward teaching changed over the years you have been teaching? Become less/more pleasurable?

   2a. Source of change? (Probe: tenure, disenchantment, kinds of students, kinds of courses, lack of rewards, other interests, etc.)

3. How important is it to you personally at this time in your career to do an excellent job of teaching?

4. Has the importance of being excellent changed over the years. More/less?

   4a. Sources of change? (Probe: other interests; tenure; no rewards; subject matter)

5. About how much time do you spend a week talking about your teaching? What sorts of things do you talk about? (student natured)

6. Do you think you are about as good as, better than, or less good a teacher than your cross-sex colleagues at your rank?

7. Do you think your cross-sex colleagues are accurately evaluating your teaching ability?

   7a. To what extent do you think they attribute your teaching ability to your sex, your personality, your subject matter competence?

8. When you have a teaching problem, how do you work it out? (Probe: Do you seek help from colleagues? Same-sex?)

9. Are there any other factors in your department that effect your teaching satisfaction and competence specifically because of your sex? (Probe: no same sex colleagues; competition amongst same sex/ being put down, etc.)

Classroom

10. About how much time do you spend preparing for a class period?

11. Do you think you spend about as much time/less time than your cross-sex colleagues at your rank?

12. How would you characterize your teaching style? (Open, informal, formal, discursive, experiential)

13. Would you give me an example of a particular classroom experience that you felt especially good about?

14. Would you give me an example of a particular classroom experience that you felt especially bad about?

15. Some professors report having management problems--e.g., students talking during lectures, reading newspapers, etc. Have you had these? How do you handle them?

16. Some professors report that students will challenge their competency and knowledge. Have you experienced that? How do you handle it?

17. Some professors report students will ask personal questions about them in the classroom? Have you experienced that? How do you handle it?

18. Some professors report that students will make snide comments about them in the classroom. Have you experienced that? (Example?) How do you handle it?

19. Are there other things that go on in your classroom that you think are attributable to the fact that you are a woman (man)? (Probe: Girls showing legs; students interrupting female speaker, etc.)

Student Evaluations

20. Do you think your students' evaluations fairly accurately reflect your competence as a teacher?

21. Do you ever get comments on your teaching evaluation forms which are not related to your competence as a teacher? (Probe: About your politics? Ideology? Personality? Clothing? Looks? etc.)

Office

22. Part of the teaching role, of course, involves seeing students outside of class in our offices. Currently, do you have a lot of students/ a few/ come to your office?

23. Have the numbers of students increased/decreased/remained about the same over the years you have been teaching?

    23a. If changed, why do you suppose that is? (Probe: Prof. less open, students less interested, teaching diff. things, etc.)

24. Do you think more students come to your office than your cross-sex colleagues'?

25. Do mostly male students or female students come or about half/half?

(ES)

26. What approach have male students used when they want a grade changed?

(ESO)

27. What approach have female students used when they want a grade changed?

28. Do male students come to discuss things other than course work? If other things, how do you handle it?

29. Do female students come to discuss things other than course work? Such as? How do you handle it?

General

30. Are there other areas about your teaching that we haven't discussed that seem especially relevant?

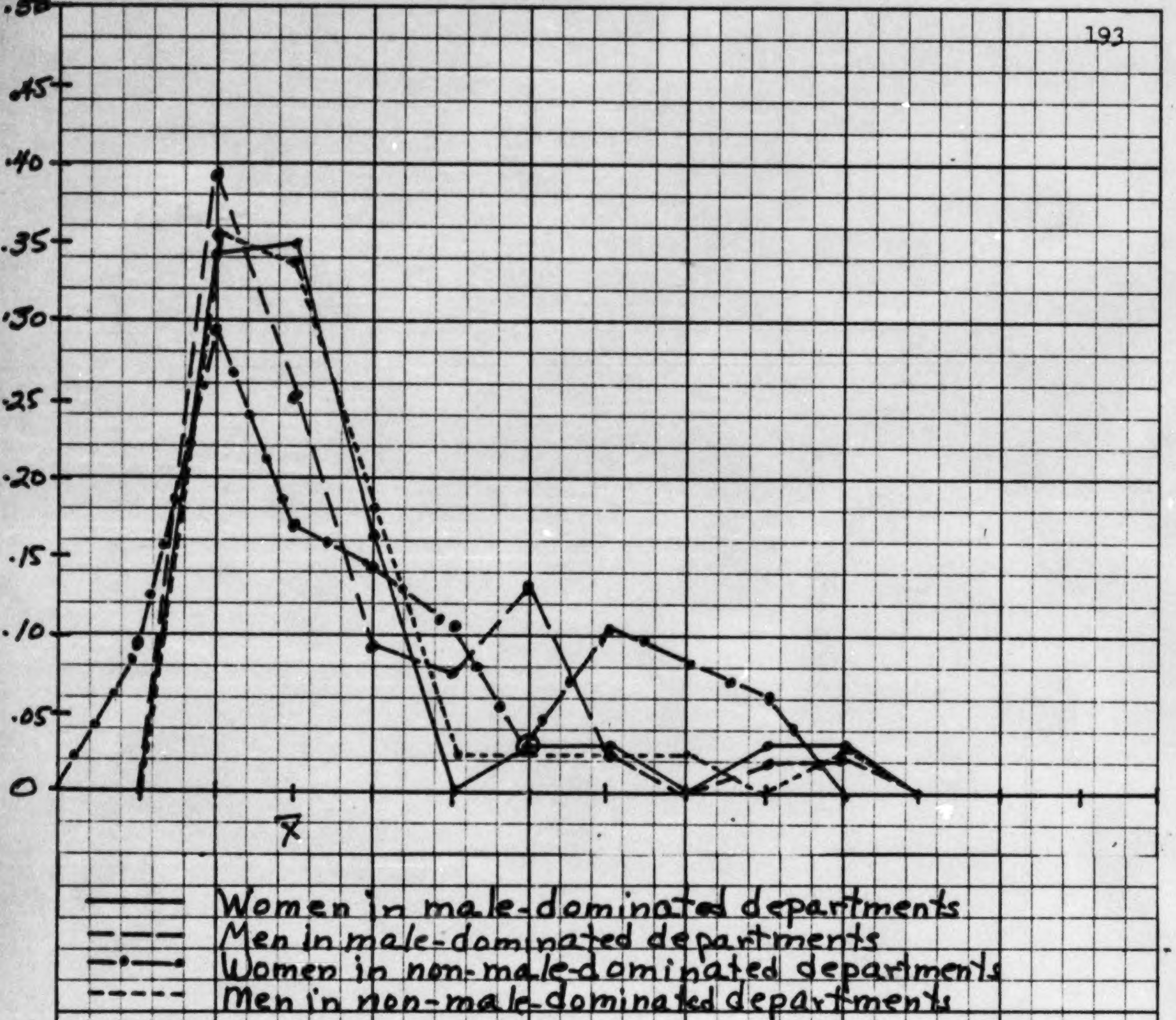
31. Do you find you become friends with your students?

32. Do you find yourself in role-conflict-- role of women/role of professor?

33. Do students expect you to be a role model?

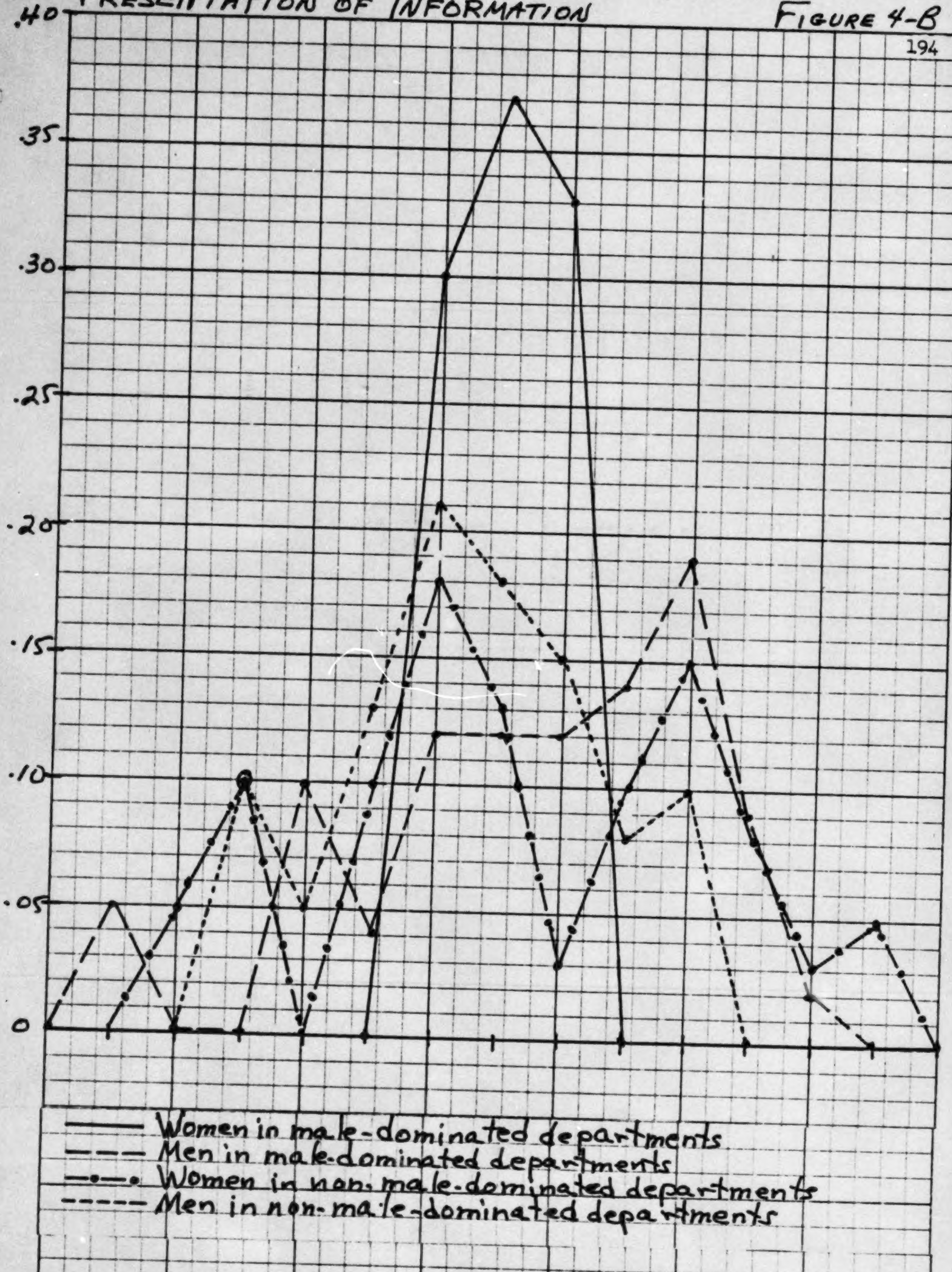
APPENDIX B

MANAGERIAL BEHAVIORS FIGURE 4-A

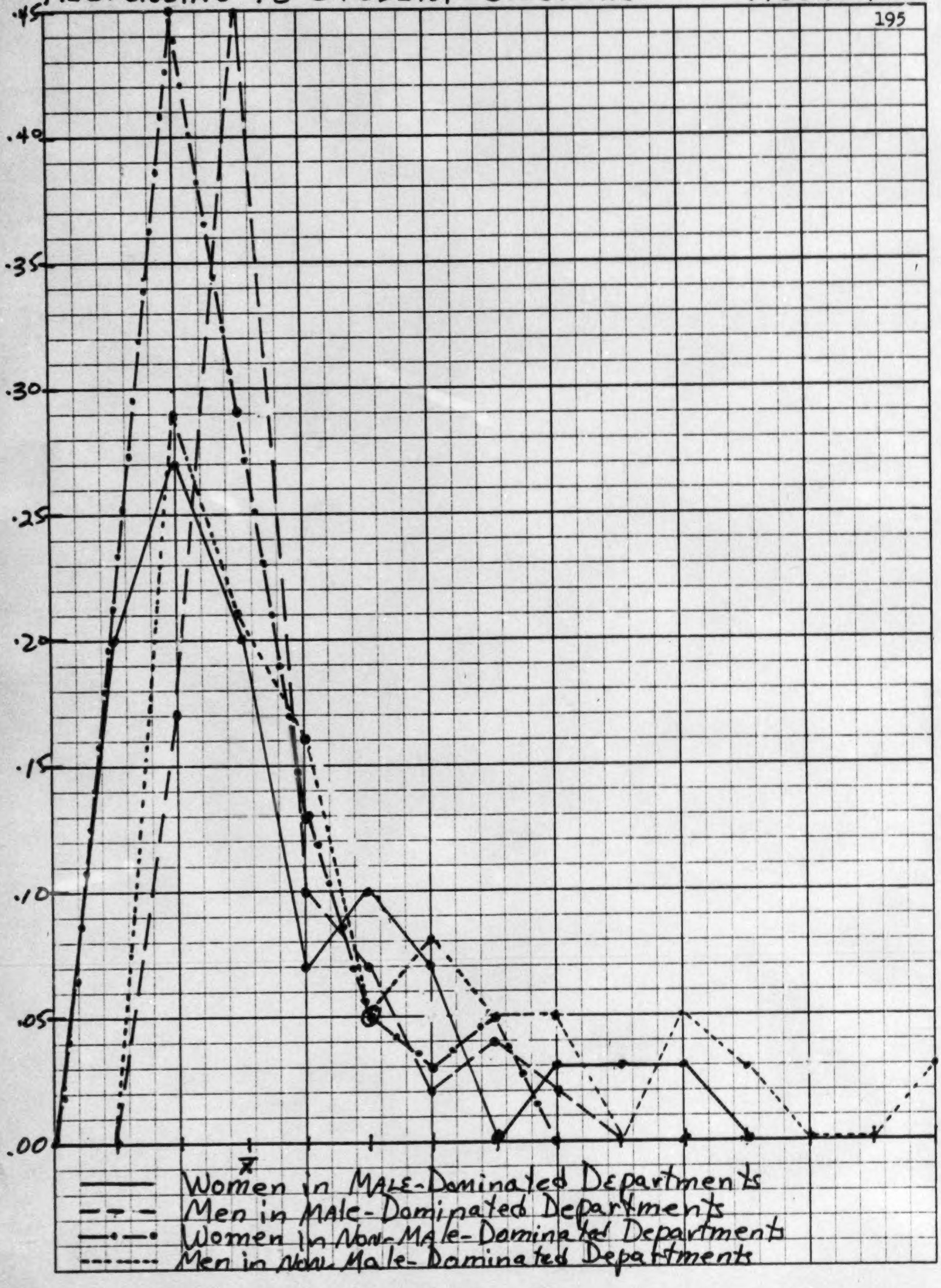


PRESENTATION OF INFORMATION

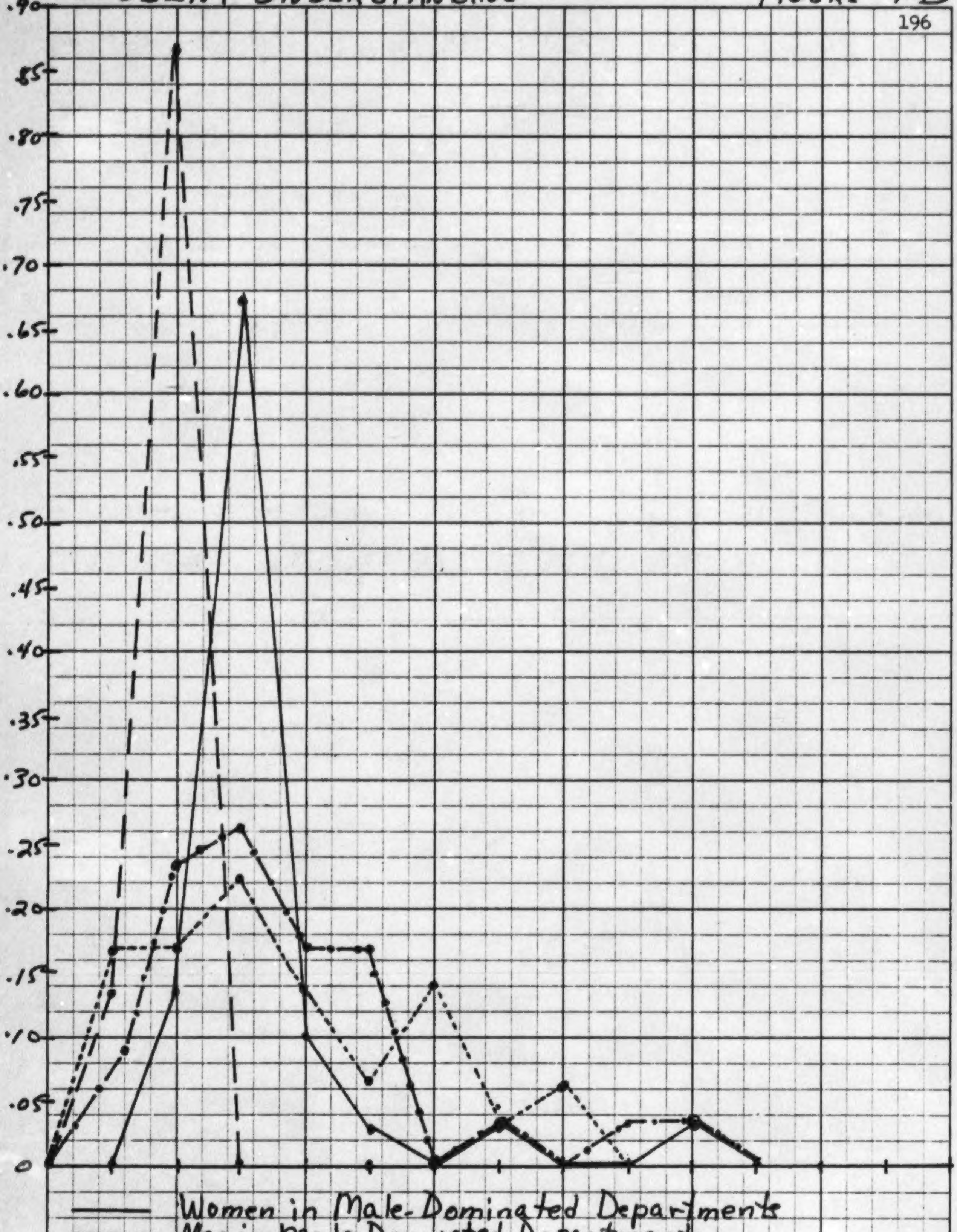
FIGURE 4-B



RESPONDING TO STUDENT QUESTIONS FIGURE 4-e

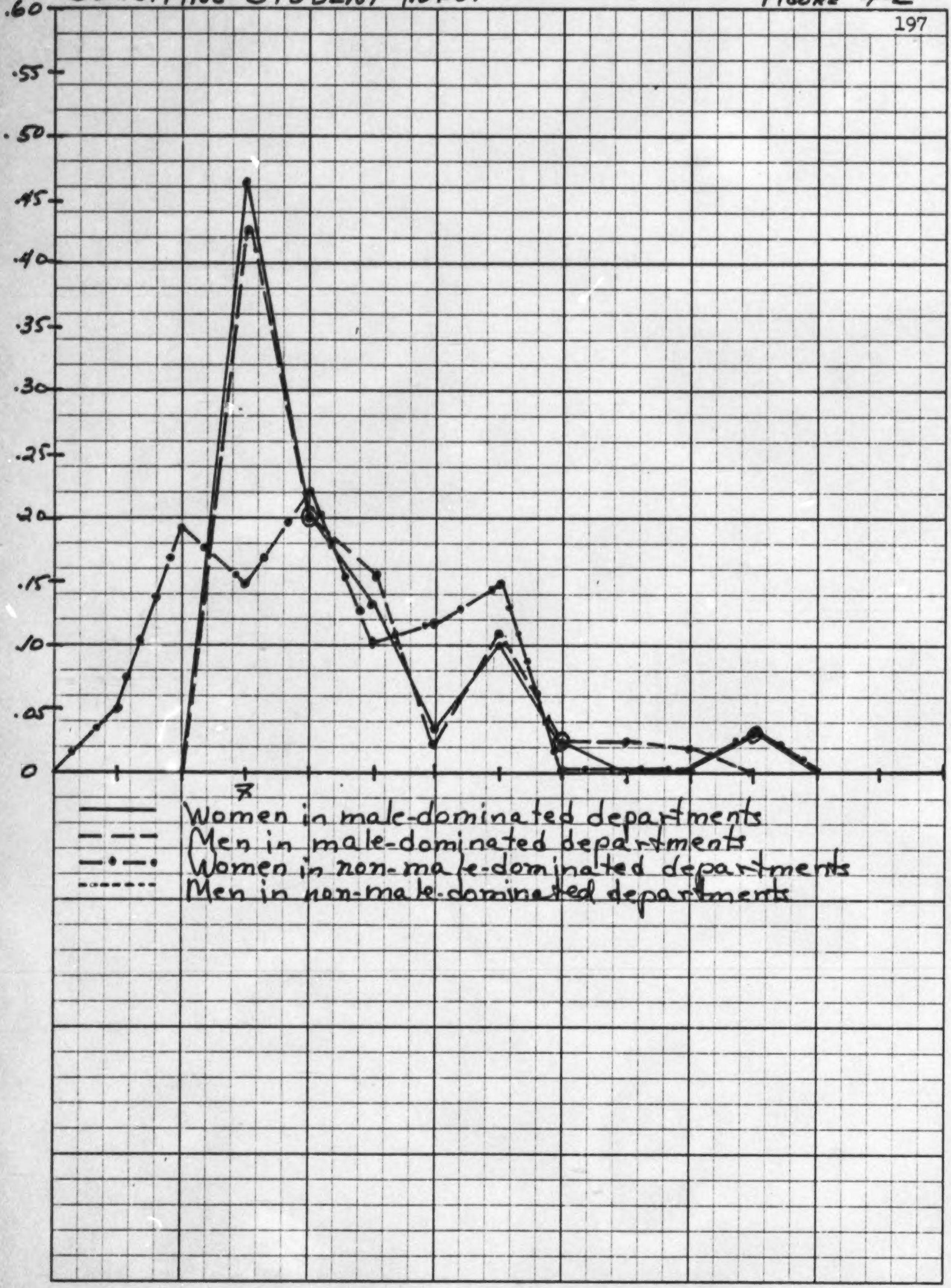


STUDENT UNDERSTANDING FIGURE 4-D



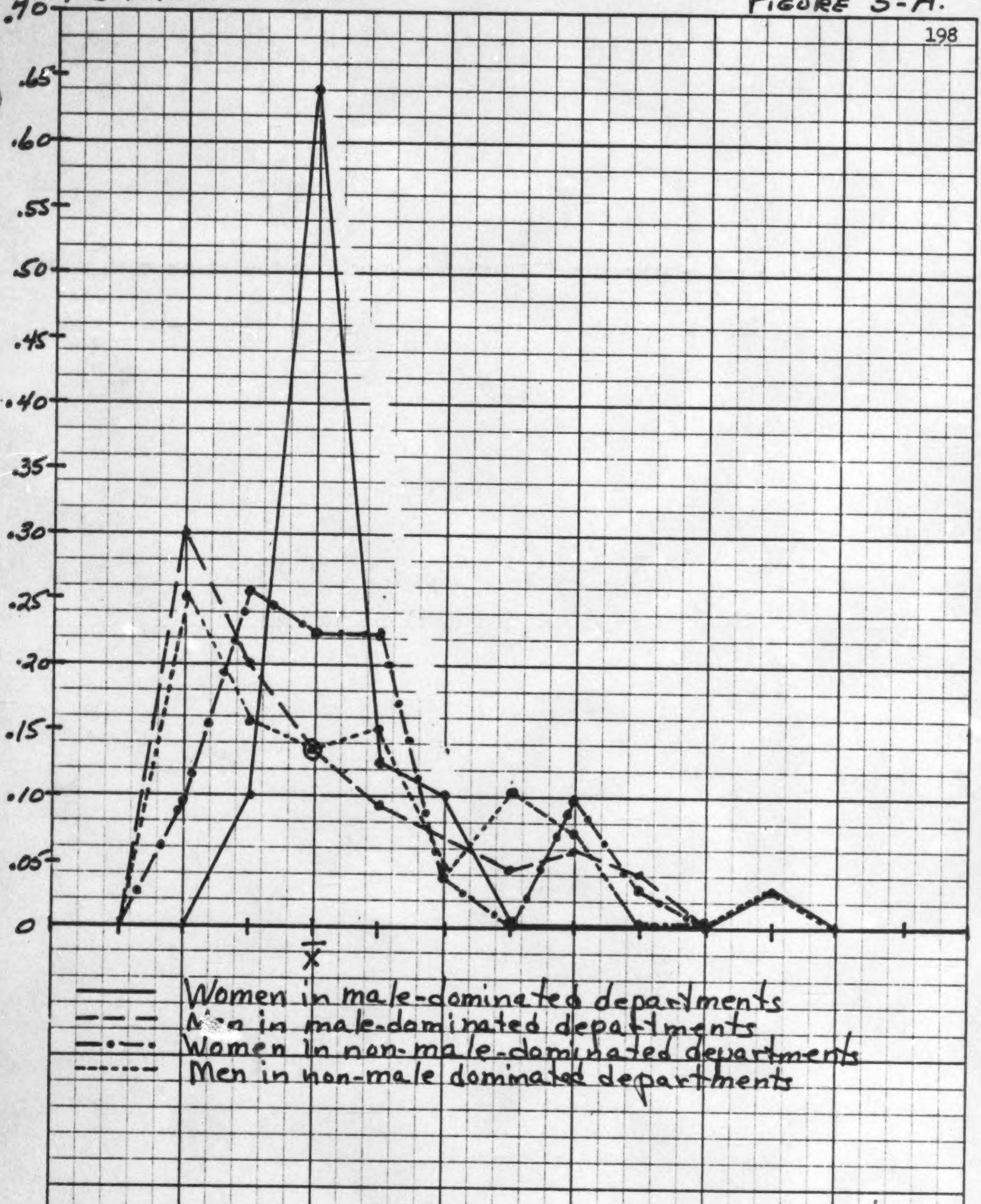
SOLICITING STUDENT INPUT

FIGURE 4-E



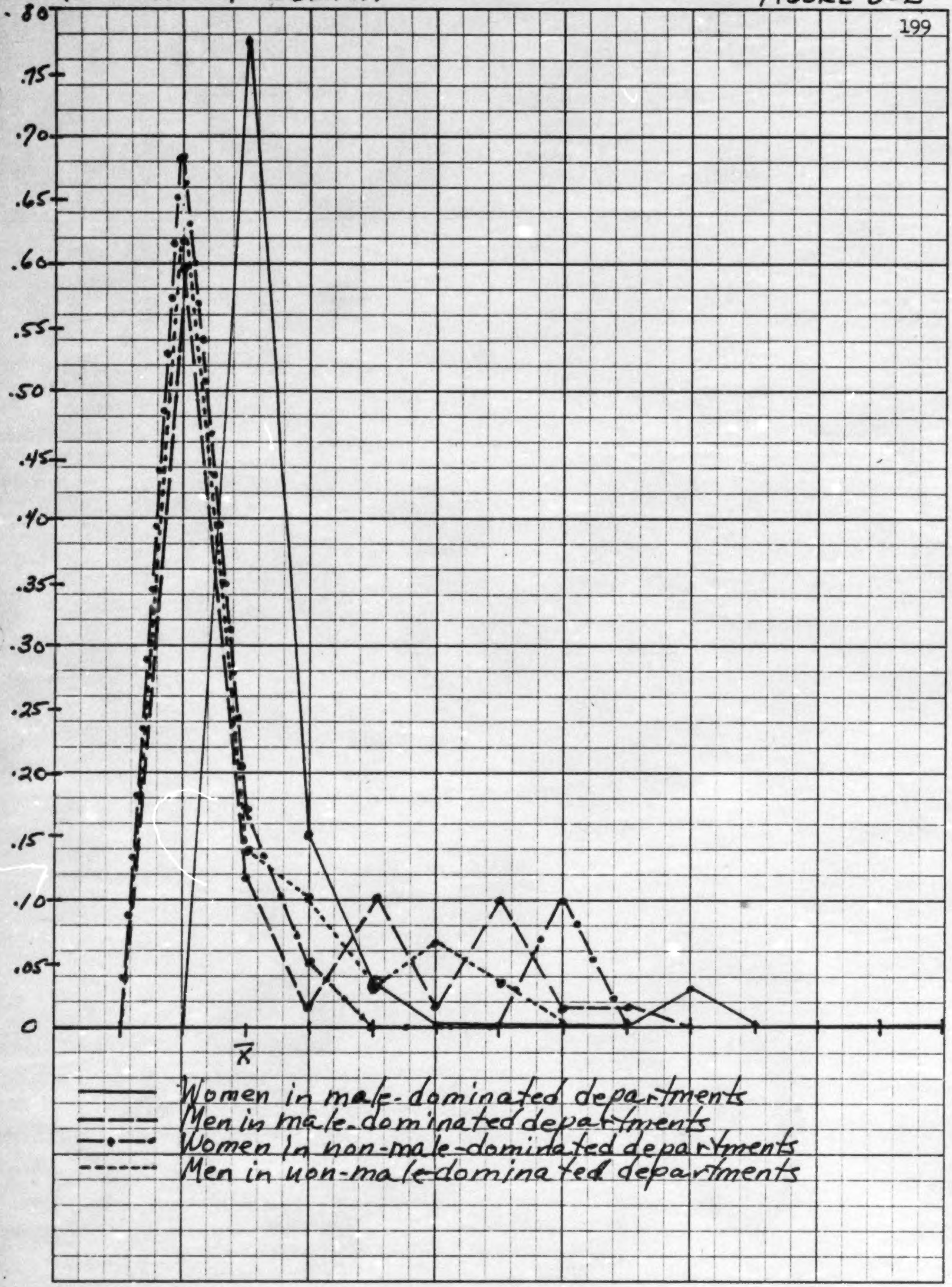
POSITIVE FEEDBACK

FIGURE 5-A.



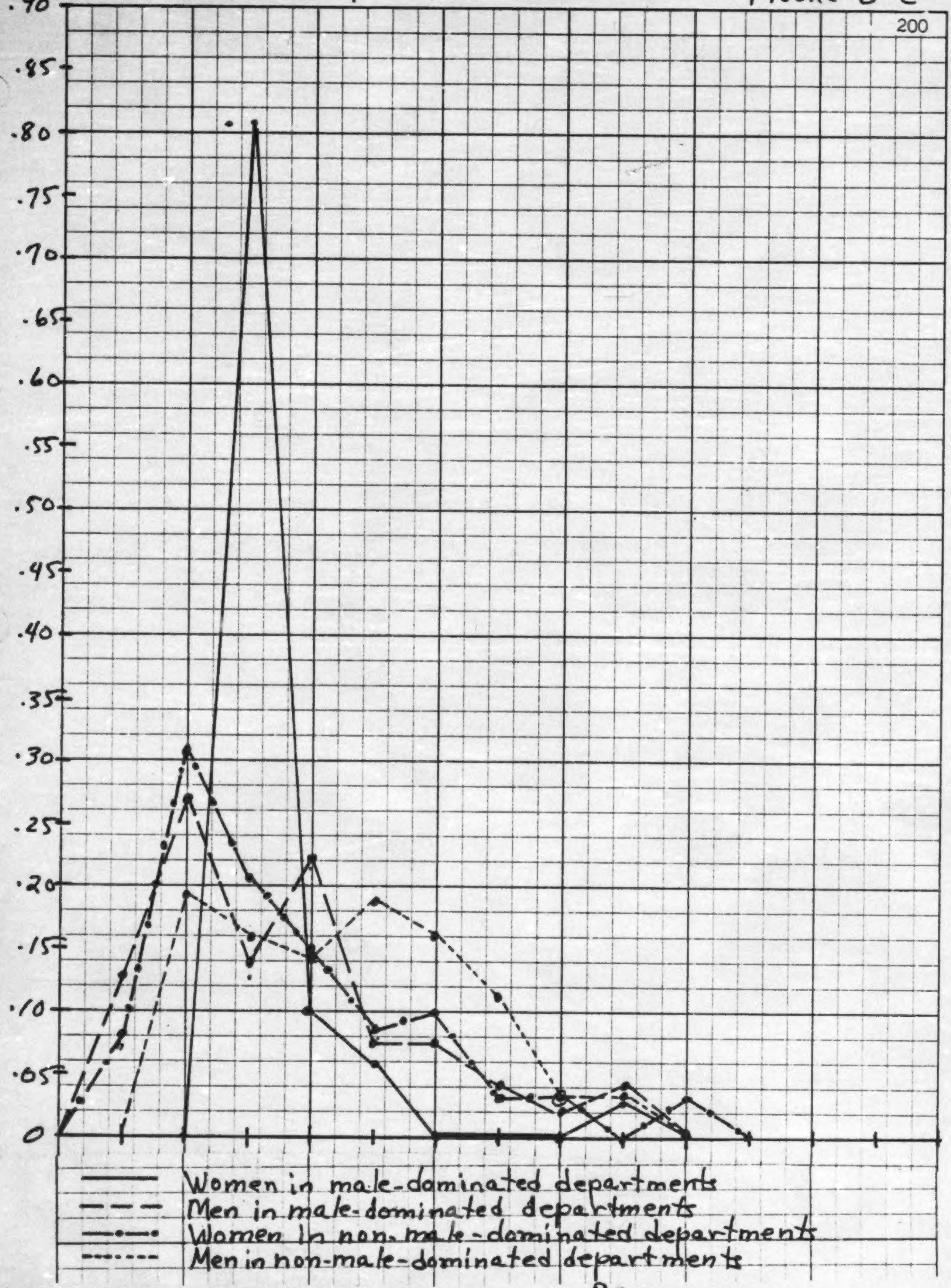
NEGATIVE FEEDBACK

FIGURE 5-B



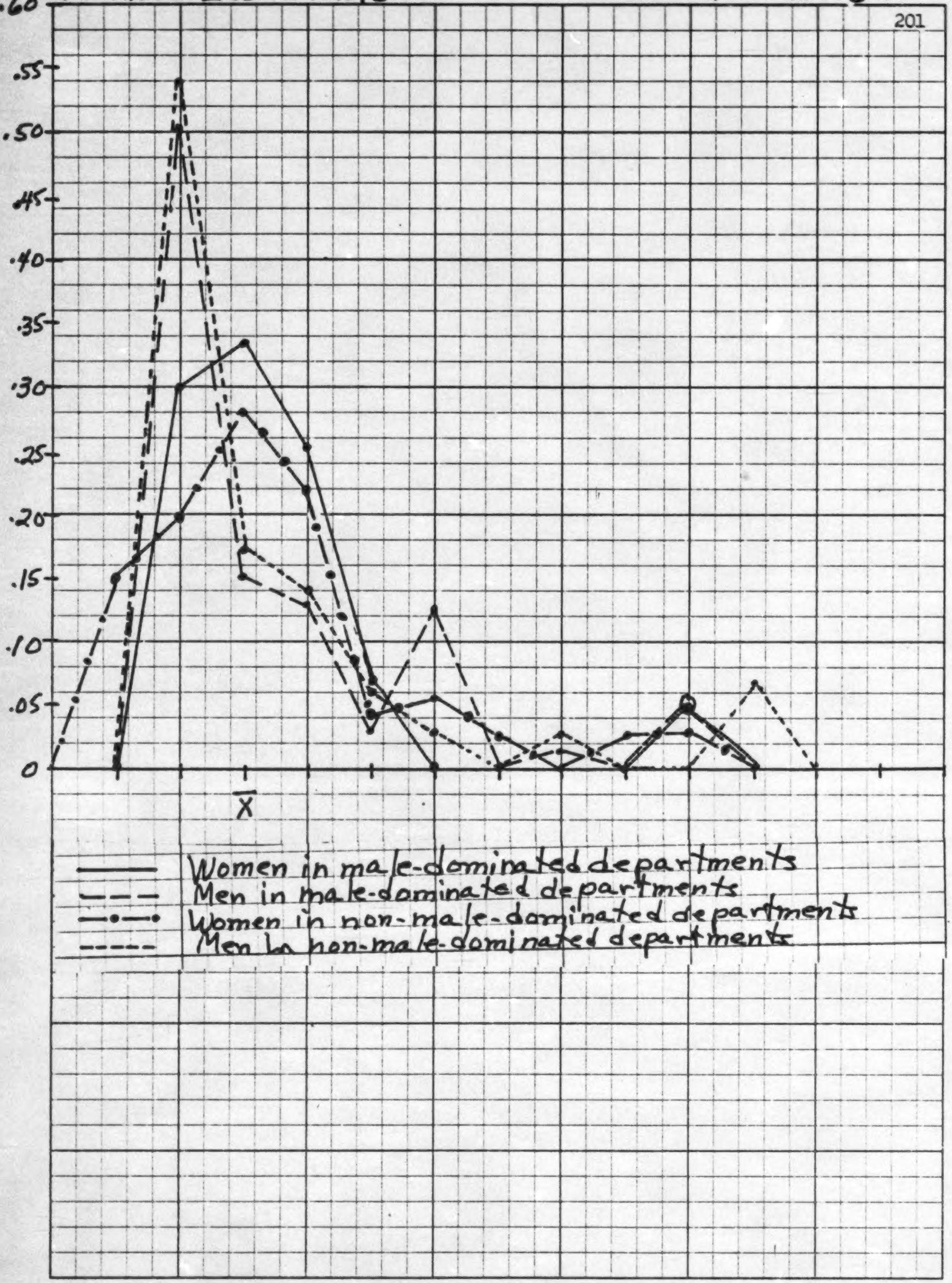
TOTAL STUDENT INPUT

FIGURE 5-C



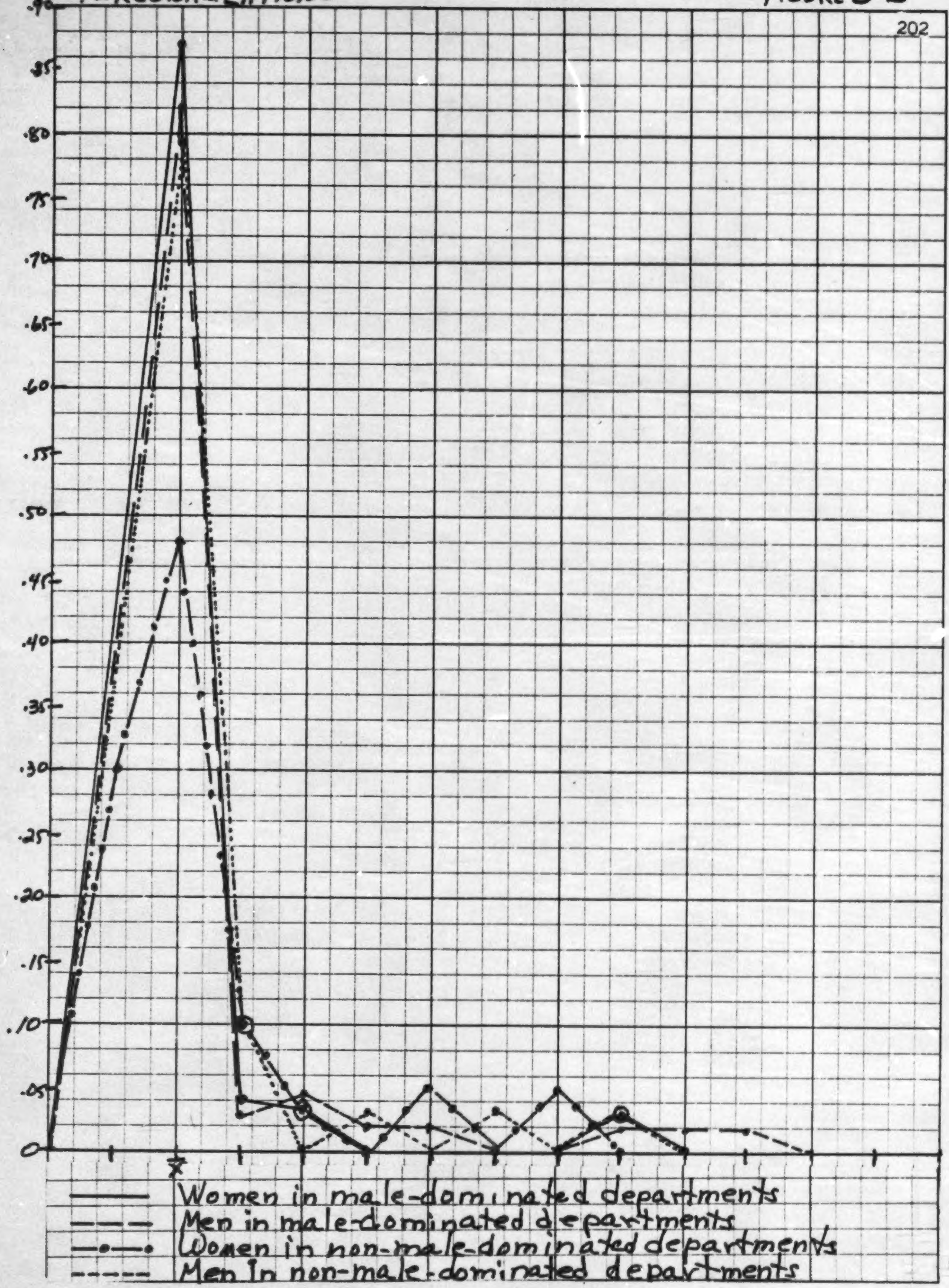
ACKNOWLEDGEMENTS

FIGURE 6-A



PERSONALIZATIONS

FIGURE 6-B



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